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CLOSURE REPORT FOR AREA OF CONCERN (AOC) 40, FORMER GOLF COURSE MAINTENANCE AREA FORMER NORTON AIR FORCE BASE, CALIFORNIA

FORMER NORTON AIR FORCE BASE SAN BERNARDINO, CALIFORNIA

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PREPARED FOR:

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE (AFCEE)
ENVIRONMENTAL SERVICES OFFICE
BASE CLOSURE RESTORATION DIVISION
BROOKS CITY-BASE, TX 782358

PREPARED BY:

EARTH TECH 1461 EAST COOLEY DRIVE, STE 100 COLTON, CALIFORNIA 92324

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB Air Force Base

AFCEE Air Force Center For Environmental Excellence

AOC area of concern
bgs below ground surface
CDM Camp, Dresser, and McKee

CoC Camp, Dresser, and McKee CoC chain-of-custody

COC contaminant of concern
CS confirmation study
DO delivery order
DQO data quality objective

EPA Environmental Protection Agency
EPC exposure point concentration
ESI expanded source investigation

FS feasibility study

GPS global positioning system
HASP health and safety plan
IC institutional control

ID identification
IRP Installation Res

IRP Installation Restoration Program
IWTP Industrial Waste Treatment Plant

mg/kg milligram per kilogram
PCB polychlorinated biphenyl
PRG preliminary remediation goal

QA quality assurance QC quality control

SAP sampling and analysis plan
SVOC semivolatile organic compound
TPH total petroleum hydrocarbons

UCL upper confidence limit
VOC volatile organic compound

WP work plan

1.0 INTRODUCTION

This document presents the closure report for area of concern (AOC) 40, known as the Golf Course maintenance area at the former Norton Air Force Base (AFB), San Bernardino, California AOC 40 was previously identified under the Installation Restoration Program (IRP). This report documents the activities performed for removal of numerous sheds, foundations, and contaminated soil. The report also presents analytical results from soil samples collected at AOC 40 after soil removal, and offers conclusions with respect to the current environmental condition of the AOC. This document is being prepared by Earth Tech under the direction of the Air Force Center for Environmental Excellence (AFCEE), and under Delivery Order (DO) 0010 as part of the Contract F41624-01-D8546.

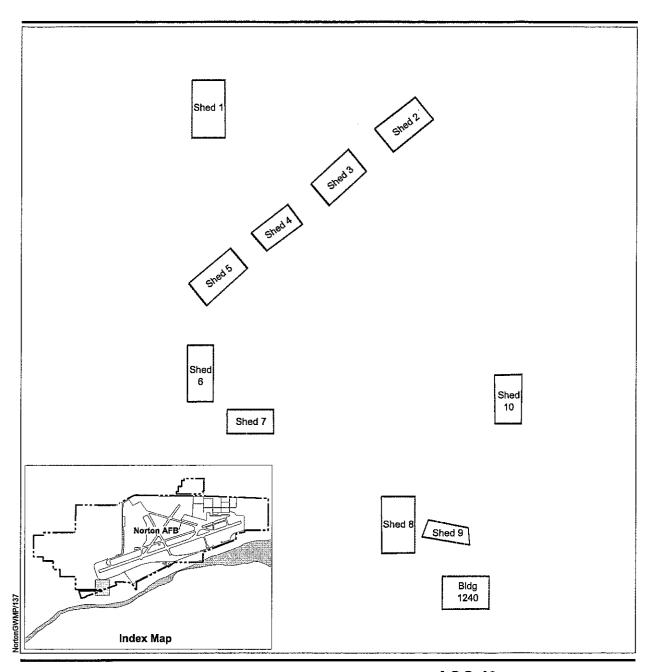
1.1 SITE LOCATION AND DESCRIPTION

AOC 40 is known as the former golf course maintenance area and is situated at the southern end of the former Industrial Waste Treatment Plant (IWTP) compound along the southern perimeter of the base (Figure 1) The former maintenance area was used by the golf course maintenance group to store and mix a variety of pesticides, herbicides, and fungicides Reportedly, spills of fungicides and arsenic-based chemicals occurred at several of the sheds Excess quantities of several chemicals were stored over long periods of time and may have leaked as the storage vessels began to deteriorate. In addition, waste oil may have been stored near one of the sheds (Camp, Dresser, and McKee [CDM] Federal 1995a, 1996).

1.2 SITE BACKGROUND

AOC 40 was investigated during two separate studies (CDM Federal 1995a, 1996). Soil sampling results indicated the presence of polychlorinated biphenyls (PCBs), fuels, pesticides, and metals (Figure 2). PCBs were detected at various locations within the site area with a maximum concentration of 3.5 milligrams/kilogram (mg/kg), a value above the residential soil preliminary remediation goal (PRG) of 0.22 mg/kg. Only two other samples had PCB concentrations of 0.23 and 0.25 mg/kg, thus exceeding the PRG. One sample, which contained chlordane at a concentration of 4.0 mg/kg, exceeded the residential soil PRG value of 1 6 mg/kg. For metals, arsenic and cadmium were found at maximum concentrations of 26 mg/kg and 15.6 mg/kg, respectively, which are both greater than the residential PRGs and Norton-specific background levels. No volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), or total petroleum hydrocarbons (TPH) with concentrations exceeding clean-up criteria were found during the investigations.

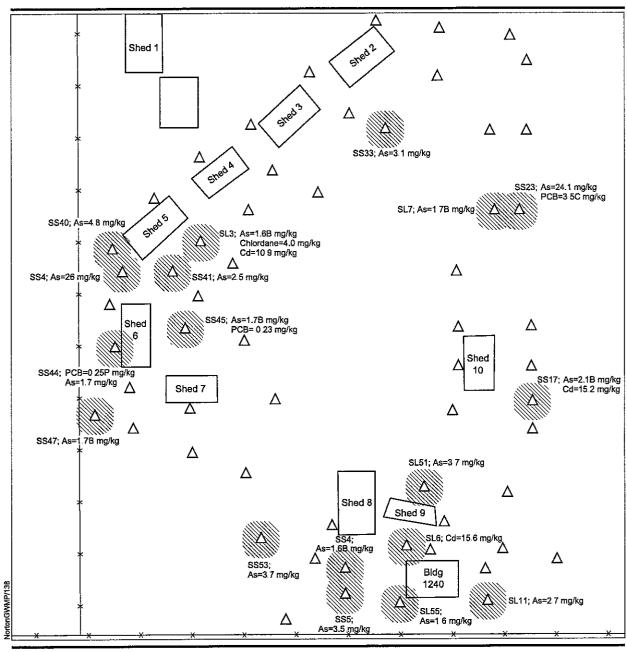
The Air Force decided to remove the old buildings and other structures at the site as part of the ongoing basewide cleanup effort. Along with building demolition at AOC 40, it was also decided to remove contaminated soil in and around "hot spots," as defined in the feasibility study (FS) (CDM Federal, 2003). A work plan (WP), including a sampling and analysis plan (SAP) and health and safety plan (HASP), was prepared to describe the activities to be performed as well as the analytical data required to determine the final site conditions (Earth Tech 2003). The work plan and SAP were approved by the regulatory community, and subsequently the demolition activities and soil removal began in mid-December 2003. Final confirmation sampling occurred in early March 2004.



AOC 40 Former Norton AFB, California



Figure 1





∆ Soil Sample Location

Potential Area of Soil Contamination

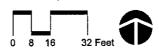
As Arsenic

Cd Cadmium

PRG Preliminary Remediation Goal

mg/kg milligram per kilogram

PCB Polychlorinated biphenyi



Residential PRG (EPA, 2000)

= 1.5*mg/kg = 9.0 mg/kg

 $\begin{array}{ll} \text{Cd} & = 9.0 \text{ mg/kg} \\ \text{PCB} & = 0.22 \text{ mg/kg} \end{array}$

Chlordane = 1.6 mg/kg

Background

B Value is greater than instrument detection limit but less than Contract Required Detection Limit

C Pesticide/PCB result confirmed by GC/MS

Used to flag concentrations where there is greater than 25% difference in second column confirmation result

Locations with Soil Contamination, AOC 40 Former Norton AFB, California

Figure 2

1.3 REMEDIAL OBJECTIVES

As presented in the work plan, the objectives of the closure of AOC 40 included removal of the remaining sheds in and adjacent to AOC 40, associated debris, and soil with contaminant concentrations exceeding residential PRGs. The FS (CDM Federal 2003) indicates that removal of the soil provides long-term effectiveness and permanence by eliminating the contamination from the site and avoids the need for institutional controls (IC). Thus this report details the activities undertaken to attain these objectives, and presents the analytical data for determining that this site requires no further action

2.0 REMEDIAL ACTION IMPLEMENTATION

AOC 40 is the area identified as the golf course maintenance area and is contained within the former IWTP fence enclosure. The area consisted of a series of metal sheds built upon wooden or concrete foundations and floors. It was used by the golf course maintenance group to store and mix a variety of pesticides, herbicides, and fungicides. Various reported spills and leaks have occurred in the past and as a result, small areas of soil have been impacted.

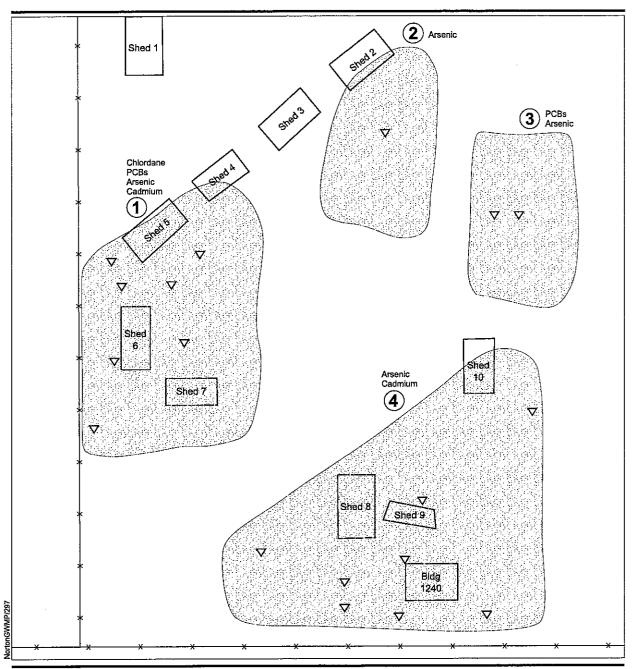
The remedial action for the site began on December 15, 2003, and consisted of the demolition of eleven metal sheds, removal of concrete foundations and wooden floors, and excavation and removal of soil contaminated with PCBs, chlordane, and metals. The following sections will describe the key activities that were performed during the remedial process Also, analytical data from confirmation soil samples collected after the soil removal will be presented Key activities included:

- Locating previously defined contaminated areas
- Removal of remaining metal sheds, floors, and foundations
- Removal of surface and shallow subsurface soil within previously defined contaminated areas
- Constructing a grid of sampling locations across the site, collection of surface soil samples at each location, and analyzing for contaminants of concern (COCs) to verify that contaminated soil has been removed
- · Grading and leveling the area
- Disposing of asphalt, concrete, metal, soil, decontamination water, and personal protection equipment waste in approved disposal facilities.

2.1 AREAS OF CONTAMINATION

Numerous surface and shallow subsurface (2 feet below ground surface [bgs]) soil samples were collected during the confirmation study (CS) (CDM Federal 1995) and expanded source investigation (ESI) (CDM Federal 1996). The analysis of these samples indicated that numerous small areas were impacted by one or more of the COPCs, including chlordane, PCBs, cadmium, and arsenic. Figure 2 displays the locations where COPC concentrations exceeded the clean-up goals, and Figure 3 shows the areas that were proposed as requiring soil removal (Earth Tech 2003).

Prior to removal of the sheds, the locations of previously defined "hot spots" were identified using figures from previous publications. The WP (Earth Tech, 2003) identified four areas for removal that would include all of the "hot spots." Essentially each area was assigned one or more COCs according to analytical results from previous investigations. Area 1 contained arsenic, cadmium, PCBs, and chlordane at concentrations above clean-up goals in one or more sampling locations. At Area 2, only arsenic was found at values greater than the clean-up goals. Area 3 was found to contain arsenic and PCBs in concentrations greater than clean-up goals. At Area 4, arsenic and cadmium were the COCs found to exceed clean-up goals. Table 2-1 identifies the clean-up goals used for this site



EXPLANATION

▼ Soil Sampling Location Exceeding Residential PRGs



Removal Area Designation

Proposed Soil Removal Areas, AOC 40 Former Norton AFB, California



Figure 3

Table 2-1. Contaminants of Concern and Target Clean-up Goals

Contaminant of	Clean-up Goal	
Potential Concern	(mg/kg)	Rationale
PCBs	0 22	U.S EPA Region 9 Residential PRGs
Chlordane	1.6	U.S. EPA Region 9 Residential PRGs
Arsenic	1 5*	Background at Norton
Cadmium	9.0	California Modified Residential PRGs

Note: * Based on background levels of arsenic at Norton AFB

EPA = Environmental Protection Agency

mg/kg = milligrams per kilogram
PCB = polychlorinated biphenyl
PRG = preliminary remediation goal

Once the removed areas were defined, wooden stakes were set at the corners of the area boundary lines. Also, each building corner was surveyed relative to a known location, and the removal area boundaries were identified using a handheld global positioning system (GPS).

2.2 DEMOLITION OF MAINTENANCE SHEDS

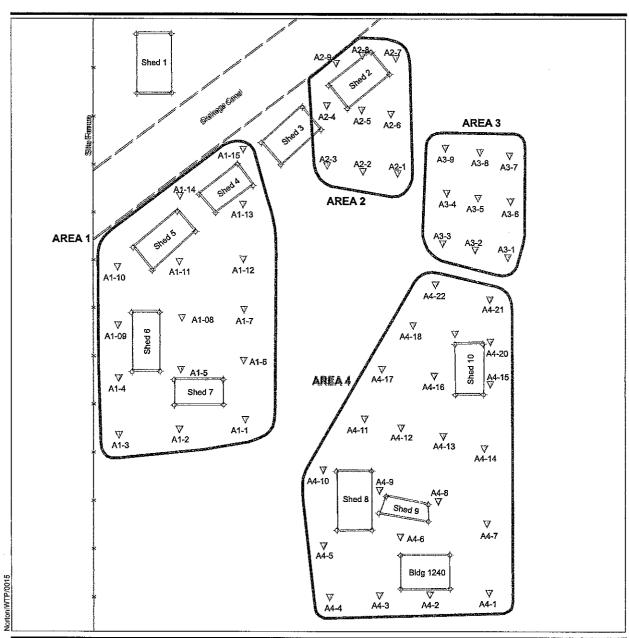
Demolition of the metal sheds began once the soil removal areas had been defined and marked. A total of 11 metal sheds averaging 24 feet long by 12 feet wide by 10 feet high (Figure 3) were demolished. All but 2 of the sheds contained wood floors and concrete/asphalt aprons. One of the sheds measured 28 feet long by 20 feet wide by 15 feet high, and included an asphalt floor. The largest shed measured 34 feet long by 25 feet wide by 10 feet high, and included a concrete floor that was as much as 2 feet thick. Demolition of the buildings was accomplished by collapsing the structure using an excavator and large loader. The metal frames and corrugated tin were moved to a central location on site, and placed in trucks for transport to a metal recycling facility. Concrete floors and foundations were broken into manageable pieces using a backhoe-mounted hydraulic breaker, then loaded into trucks, and transported to a concrete recycling facility. Wood, insulation, and other building debris were separated out, and hauled to a local landfill facility for proper disposal or recycling. Selected photos from the site have been included in Appendix A

2.3 REMOVAL OF SOIL

2.3.1 Phase I Removal and Confirmation Sampling

As described above, the 18 previous sampling locations served as reference points for identifying potentially contaminated areas of soil recommended for remediation in previous studies (Figure 2). These points essentially defined four areas of soil contamination as shown in Figure 3. Following the building demolition and removal, a rubber-wheeled loader with bucket was used to remove soil within each of the four defined areas. The soil was removed in a single 6-inch lift and the removal was completed on December 24, 2003. Figure 4 displays the approximate boundaries and shapes of each of the four areas of soil actually removed. Soil from each area was placed in a separate stockpile adjacent to its respective area. No underground utilities or piping was encountered during the removal activities.

After the soil removal work was completed, sampling locations for the collection of confirmation soil samples were established within each of the 4 areas. In accordance with the work plan, a sampling grid was established in each area. The first location within each of the removal areas was placed relative to the southeastern corner of the respective area. Subsequent locations were placed relative to the first location, and were placed such that they were evenly distributed within each area. The total number of





∇ Confirmation Sampling Location

A2-9 Sampling Location ID

Dulldings

Removal Area

AOC 40 Approximate Extent of Initial Soil Removal and Confirmation Sample Locations Former Norton AFB



Figure 4

locations for each area was based on the proposed locations presented in the WP (Earth Tech, 2003). Figure 4 displays the layout of the sampling locations in each of the removal areas.

For Area 1, a total of 18 sampling locations were proposed, but only 15 locations were actually sampled. The reduction in locations was a result of a smaller area of removal than anticipated because a portion of Area 1 was limited by a northeast trending drainage canal (see Figure 4). Samples collected in this area were analyzed for arsenic and cadmium using U.S. Environmental Protection Agency (EPA) Method 6010B, PCBs using U.S. EPA Method 8082, and chlordane using U.S. EPA Method 8081A.

For Area 2, a total of 12 sampling locations were proposed, but only 9 locations were actually sampled. The reduction in locations was a result of a smaller area of removal than anticipated. The northern portion of Area 2 is limited by the same northeast trending drainage canal that affects Area 1 (see Figure 4). Samples collected in this area were analyzed for arsenic using U.S. EPA Method 6010B.

For Area 3, a total of nine sampling locations were proposed, and nine locations were actually sampled (see Figure 4). Samples collected in this area were analyzed for arsenic using U.S. EPA Method 6010B, and PCBs using U.S. EPA Method 8082

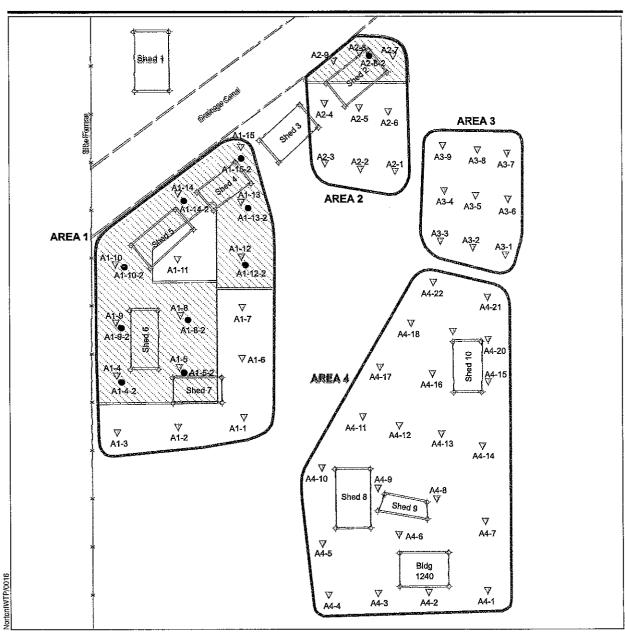
For Area 4, a total of 20 sampling locations were proposed, but 22 locations were actually sampled. The actual size of the removal area was made slightly larger than that proposed in the WP (Earth Tech, 2003), and as such, more locations were necessary to adequately cover the area (see Figure 4). Samples collected in this area were analyzed for arsenic and cadmium using U.S. EPA Method 6010B

Soil samples were collected immediately adjacent to the flagged points using sterile disposable plastic scoops. The soil was scooped into a sterile disposable plastic bag, thoroughly mixed, and then poured into a sterile glass jar. Each jar was labeled with the sample identification number, placed in a plastic bag, then into an ice-filled cooler for shipment to the laboratory. A chain-of-custody (CoC) form was properly filled out and accompanied each cooler to the laboratory. Sample locations were identified on the basis of the area number designation and sequential sampling point, thus the first sample location in Area 1 was designated A1-1, the second sample location was identified as A1-2, and so on. Soil sample identification numbers were assigned sequentially based on the area number designation being sampled, thus the first surface soil confirmation sample collected in Area 1 at location number 1 was designated A40-A1-CS-001-D0.0, the second sample collected in Area 1 at location number 2 was designated A40-A1-CS-002-D0.0. Duplicate samples were identified by incrementing the left-most digit of the sequential portion of the sample ID, thus a duplicate for sample location number 8 in Area 2 was identified as A40-A2-CS-102-D0.0.

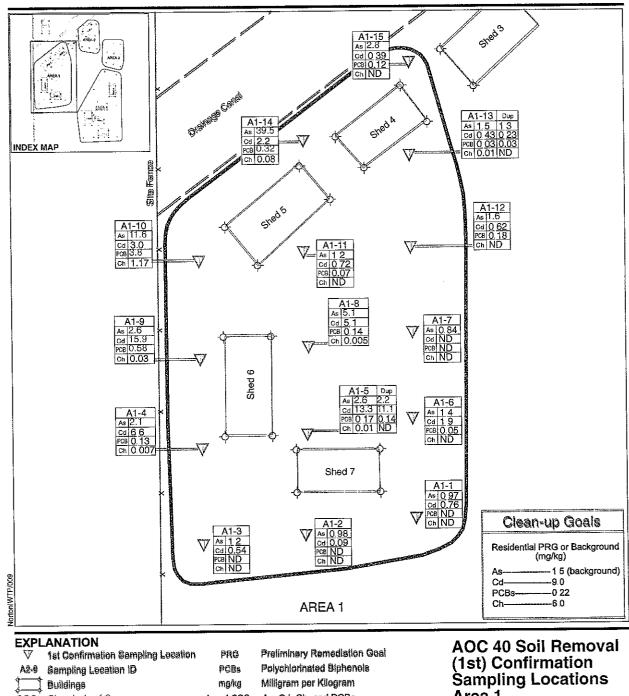
Detailed analytical results are discussed below; however, they indicated that two of the four areas still had COCs detected that exceeded the clean-up goals in one or more locations. Using the same removal process, an additional 6-inch lift was performed in and around the sampling points with COC concentrations greater than the clean-up goal. After the soil was removed, a second confirmation sample was collected immediately adjacent to the first confirmation sampling points where COC concentrations exceeded the clean-up goal. Figure 5 displays the outline of the first and second removal lifts, as well as the points where the second confirmation samples were collected.

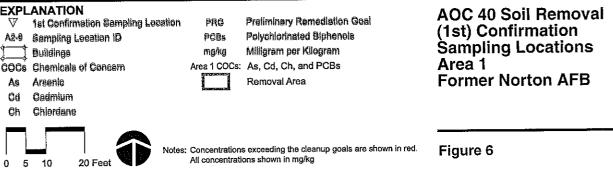
2.3.1.1 Analytical Results

Area 1. As indicated above, confirmation soil samples collected in Area 1 were analyzed for arsenic, cadmium, PCBs, and the pesticide chlordane Figure 6 displays the sampling locations and associated analytical results from Area 1 Of the 15 samples collected in this area, 8 of them had









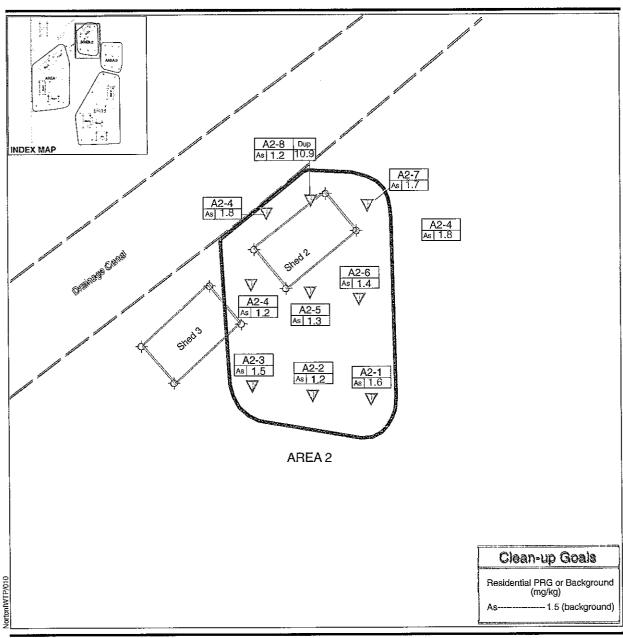
detections of one or more of the COCs for this area that exceeded clean-up goals. Of these, arsenic exceeded the clean-up goal of 1.5 mg/kg in each of the eight samples with the highest concentration of 39.5 mg/kg found at location A1-14. The lowest concentration was found to be 1.6 mg/kg in two of the eight samples. Cadmium concentrations exceeded the clean-up goal of 9.0 mg/kg in the samples collected from locations A1-9 and A1-5, with concentrations of 15.9 mg/kg and 13.3 mg/kg, respectively. PCB concentrations exceeded the clean-up goal of 0.22 mg/kg at the locations A1-9, A1-10, and A1-14 with concentrations of 0.58 mg/kg, 3.8 mg/kg, and 0.32 mg/kg, respectively. Chlordane concentrations did not exceed the clean-up goal of 6.0 mg/kg in any of the samples collected

- Area 2. Confirmation soil samples collected in Area 2 were analyzed for arsenic. Figure 7 displays the sampling locations and associated results from Area 2. Of the nine samples collected, four samples, including a duplicate, had concentrations of arsenic exceeding the clean-up goal of 1.5 mg/kg. The sample collected at location A2-8 had arsenic detected at only 1 2 mg/kg; however, the duplicate sample had arsenic at 10.9 mg/kg. The samples at locations A2-1, A2-7, and A2-8 had arsenic concentrations slightly above clean-up goals at 1 6 mg/kg, 1.7 mg/kg, and 1 8 mg/kg, respectively.
- Area 3... Confirmation soil samples collected in Area 3 were analyzed for arsenic and PCBs. Figure 8 displays the sampling locations and associated results from Area 3.. Of the nine samples collected, four of the samples had arsenic concentrations slightly exceeding the clean-up goal of 1.5 mg/kg. The sample collected at location A3-6 had the highest arsenic detected at a concentration of 2.2 mg/kg. The other three samples varied from 1.6 mg/kg at two locations (A3-1 and A3-7) to 1.9 mg/kg at A3-5. None of the samples had PCBs that exceeded the clean-up goal.
- Area 4. Confirmation soil samples collected in Area 4 were analyzed for arsenic and cadmium Figure 9 displays the sampling locations and associated results from Area 4. Of the 22 samples collected, 10 of the samples had arsenic concentrations slightly exceeding the clean-up goal of 1.5 mg/kg. The sample collected at location A4-16 contained an arsenic concentration of 3.0 mg/kg while the other nine samples had arsenic concentrations that varied from 2.3 mg/kg (A4-6) to 1 6 mg/kg (A4-8 and A4-18). A duplicate sample collected from location A4-19 contained cadmium at a concentration of 9.5 mg/kg, thus greater than the clean-up goal of 9.0 mg/kg

Table 2-2 lists the sample location numbers, sample identification numbers, and analytical results for each of the confirmation samples collected after the first 6-inch lift of soil was removed. Actual laboratory reports are included in Appendix B.

2.3.2 Phase II Removal and Confirmation Sampling

As discussed above, the analytical results obtained from the post-removal confirmation soil samples indicated that portions of Areas 1 and 2 still contained concentrations of one or more COCs that exceeded the clean-up goals. Thus the Air Force elected to perform a second soil removal action within those portions of Areas 1 and 2. The soil was removed in another single 6-inch lift using a rubber wheeled loader with bucket. The removal was completed on March 5, 2004. The length and width of the second removal areas were approximately one-half the distance between sampling points with COC concentrations above clean-up goals and those sampling points with COC concentrations at or below the clean-up goals. The western limit of Area 1 was limited by the site boundary fence along the golf course, and the northern limit for both Areas 1 and 2 was limited by the drainage canal. Soil from each area was placed onto the stockpile adjacent to its respective area.



EXPLANATION

√ 1st Confirmation Sampling Location

A2-9 Sampling Location ID

† Buildings

COCs Chemicals of Consern

As Arsenie

PRG Preliminary Remediation Goal malks Milligram per Kilogram

Area 2 COCs: As

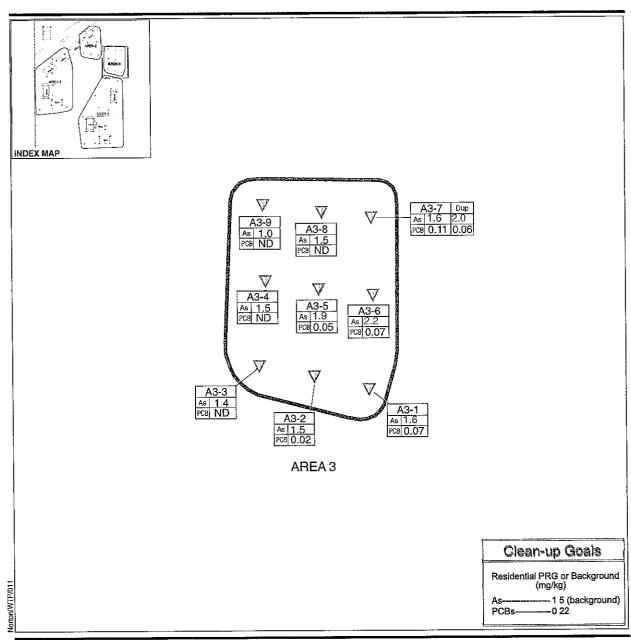
Removal Area

AOC 40 Soil Removal (1st) Confirmation Sampling Locations Area 2 Former Norton AFB



Notes: Concentrations exceeding the cleanup goals are shown in red All concentrations shown in rng/kg.

Figure 7



EXPLANATION

∇ Confirmation Sampling Location

A2-9 Sampling Location ID

Buildings

COCs Chamicals of Concern

As Arsenie

PRG Preliminary Remediation Goal
PCBs Polychlorinated Biphenels
mg/kg Milligram per Kilogram

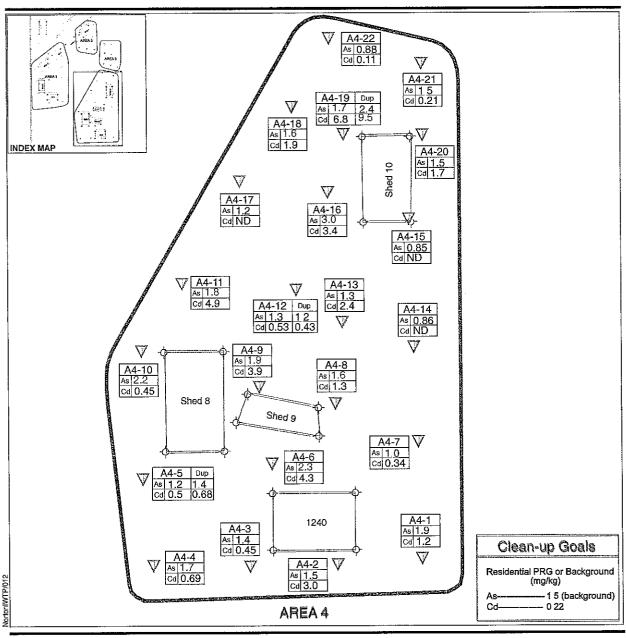
Area 3 COCs: As and PCBs
Removal Area

AOC 40 Soil Removal Confirmation Sampling Locations Area 3 Former Norton AFB



Notes: Concentrations exceeding the cleanup goals are shown in red All concentrations shown in mg/kg

Figure 8



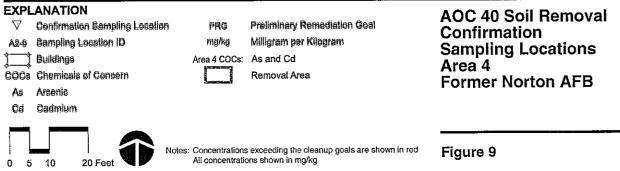


Table 2-2. Analytical Results from Confirmation Soil Samples: 1st Removal Page 1 of 2

	Page	1012			
Location ID	Sample ID	PCBs	Chlordane	Arsenic	Cadmium
Area 1		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
A1-1	A40-A1-CS-001-D0.0	ND	ND	0 97J	0.76
A1-2	A40-A1-CS-002-D0.0	ND	ND	0 98J	0.09J
A1-3	A40-A1-CS-003-D0.0	ND	ND	1.2	0.54J
A1-4	A40-A1-CS-004-D0.0	0.13	0.007J	2.1 2.6 2.2	6.6
A1-5	A40-A1-CS-005-D0.0	0.17	0.01J	26	13.3
, 0	A40-A1-CS-105-D0.0 (Dup)	0.14	ND	2 2	11.1
A1-6	A40-A1-CS-006-D0.0	0.047	ND	1.4	1.9
A1-7	A40-A1-CS-007-D0.0	ND	ND	0.84J	ND
A1-8	A40-A1-CS-008-D0.0	0.14	0.005	5.1	5.1
A1-9	A40-A1-CS-009-D0.0	0.14		2.6	
			0.033		15.9
A1-10	A40-A1-CS-010-D0.0	3.8	1 27	11.6	3.0
A1-11	A40-A1-CS-011-D0 0	0.06J	ND	1.2	0.72
A1-12	A40-A1-CS-012-D0.0	0 18	ND	1.6	0 62
A1-13	A40-A1-CS-013-D0.0	0 03J	0.007	1.5	0.43J
	A40-A1-CS-113-D0.0 (Dup)	0.03J	ND	1.3	0.23J
A1-14	A40-A1-CS-014-D0.0	0.32	0 076	39.5	2.2
A1-15	A40-A1-CS-015-D0.0	0.12	ND	2.8	0 39J
Area 2					
A2-1	A40-A2-CS-001-D0.0	NA	NA	1.6	NA
A2-2	A40-A2-CS-002-D0.0	NA	NA	1.2	NA
A2-3	A40-A2-CS-003-D0.0	NA	NA	1.5	NA
A2-4	A40-A2-CS-004-D0.0	NA	NA	1.2	NA
A2-5	A40-A2-CS-005-D0.0	NA	NA	1.3	NA
A2-6	A40-A2-CS-006-D0.0	NA	NA	1.4	NA
A2-7	A40-A2-CS-007-D0.0	NA	NA	1.7	NA
A2-8	A40-A2-CS-008-D0.0	NA	NA	1.2	NA
712 0	A40-A2-CS-108-D0.0 (Dup)	NA	NA	10.9	NA
A2-9	A40-A2-CS-009-D0.0	NA	NA	1.8	NA
712 0	740 72 00 000 B0.0	IVA	14/3		IN/S
A 2 4	Area 3	0.074	NI A	5.5	NIA
A3-1	A40-A3-CS-001-D0.0	0.071	NA	1.6	NA
A3-2	A40-A3-CS-002-D0.0	0.024J	NA	1.5	NA
A3-3	A40-A3-CS-003-D0 0	ND	NA	1 4	NA
A3-4	A40-A3-CS-004-D0.0	ND	NA	1.5	NA
A3-5	A40-A3-CS-005-D0 0	0.048	NA	1.9	NA
A3-6	A40-A3-CS-006-D0.0	007	NA	2.2	NA
A3-7	A40-A3-CS-007-D0.0	0.11	NA	1,6	NA
	A40-A3-CS-107-D0.0 (Dup)	0 057	NA	2.0	NA
A3-8	A40-A3-CS-008-D0.0	ND	NA	1.5	NA
A3-9	A40-A3-CS-009-D0.0	ND	NA	1.0	NA
Area 4					
A4-1	A40-A4-CS-001-D0.0	NA	NA	1.9	1.2
A4-2	A40-A4-CS-002-D0 0	NA	NA	15	3.0
A4-3	A40-A4-CS-003-D0.0	NA	NA	1.4	0.45J
A4-4	A40-A4-CS-004-D0.0	NA	NA NA	1.7	0.69
A4-5	A40-A4-CS-004-D0:0	NA	NA NA	1.2	0.5J
. \T=U	A40-A4-CS-105-D0.0 (Dup)	NA NA	NA NA	1.4	0.53
A4-6	A40-A4-CS-105-D0.0 (Dup)	NA NA	NA NA	1.4 2.3	4.3
/11- 0	A70-A4-C0-000-D0.0	INA	IVA	۵.2	4.3

Table 2-2. Analytical Results from Confirmation Soil Samples: 1st Removal Page 2 of 2

	1 490 1	- 01 2			
Location ID	Sample ID	PCBs	Chlordane	Arsenic	Cadmium
A4-7	A40-A4-CS-007-D0.0	NA	NA	1.0	0.34J
A4-8	A40-A4-CS-008-D0.0	NA	NA	1.6	13
A4-9	A40-A4-CS-009-D0.0	NA	NA	1.9	3.9
A4-10	A40-A4-CS-010-D0.0	NA	NA	2.2	0.45J
A4-11	A40-A4-CS-011-D0.0	NA	NA	1.8	4.9
A4-12	A40-A4-CS-012-D0.0	NA	NA	1.3	0.53
	A40-A4-CS-112-D0.0 (Dup)	NA	NA	1.2	0.43J
A4-13	A40-A4-CS-013-D0.0	NA	NA	1.3	2.4
A4-14	A40-A4-CS-014-D0.0	NA	NA	0.86J	ND
A4-15	A40-A4-CS-015-D0.0	NA	NA	0.85J	ND
A4-16	A40-A4-CS-016-D0.0	NA	NA	3.0	3.4
A4-17	A40-A4-CS-017-D0.0	NA	NA	1.2	ND
A4-18	A40-A4-CS-018-D0.0	NA	NA	1.6 1.7	19
A4-19	A40-A4-CS-019-D0.0	NA	NA	1.7	6.8
	A40-A4-CS-119-D0.0 (Dup)	NA	NA	2.4	9.5
A4-20	A40-A4-CS-020-D0.0	NA	NA	1.5	1.7
A4-21	A40-A4-CS-021-D0.0	NA	NA	1.5	0.21J
A4-22	A40-A4-CS-022-D0.0	NA	NA	0.88J	0.11J

Note: Shaded values indicate those concentrations that exceed clean-up goals

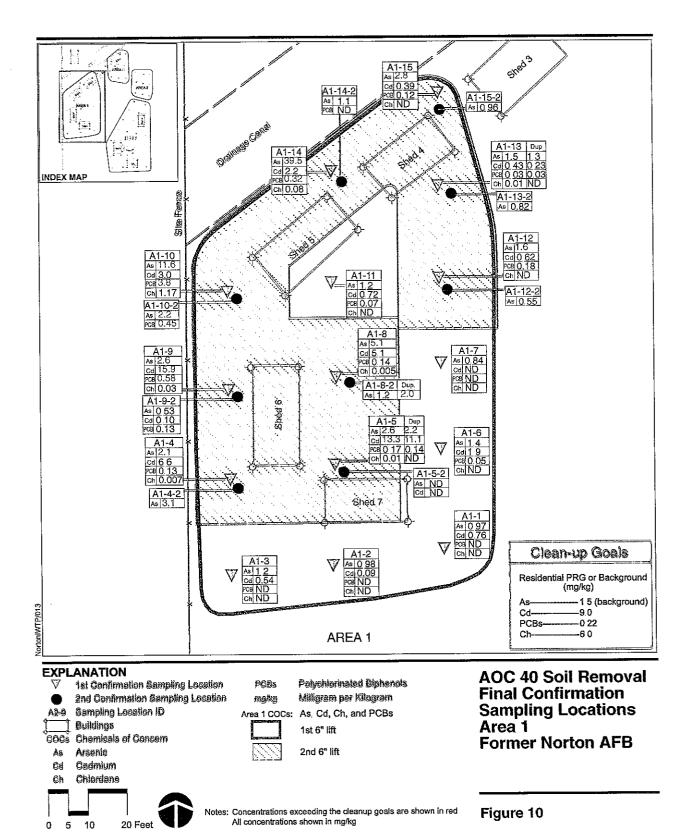
Dup = duplicate sample
J = estimated value
mg/kg = milligram per kilogram
NA = not analyzed
ND = not detected

PCB = polychlorinated biphenyl

After the second 6-inch lift was removed, initial confirmation sample locations with elevated COCs were restaked according to GPS coordinates and measured from stakes representing other undisturbed confirmation sampling locations. Soil samples were collected immediately adjacent to the former confirmation sample locations with COC concentrations greater than clean-up goals, and represented essentially the same locations as were sampled after the first removal, except now with an additional 6 inches of soil removed. The soil was scooped into a sterile disposable plastic bag using plastic disposable scoops, thoroughly mixed, and then poured into a sterile glass jar. Each jar was labeled with the sample identification number, placed in a plastic bag, then into an ice-filled cooler for shipment to the laboratory. A CoC form was properly filled out and accompanied each cooler to the laboratory.

2.3.2.1 Analytical Results

Area 1. As discussed above, a total of eight confirmation samples had one or more COCs with concentrations exceeding the clean-up goals after the first removal. These eight locations where COCs were found to exceed clean-up goals after the first removal were sampled again after the second removal, and analyzed for arsenic, cadmium, and PCBs (Figure 10). The sample collected at A1-4-2 had arsenic at 3.1 mg/kg, which exceeded the clean-up goal of 1.5 mg/kg. The sample collected at A1-8-2 had arsenic detected at a concentration of 2.0 mg/kg, 0.5 mg greater than the clean-up goal of 1.5 mg/kg. The sample collected at A1-10-2 was found to contain arsenic at a concentration of 2.2 mg/kg, and a PCB concentration of 0.45 mg/kg, thus exceeding the clean-up goals of 1.5 mg/kg for arsenic and 0.22 mg/kg for PCBs. None of the other samples had detections of the COCs greater than the clean-up goals. The second removal substantially reduced the concentrations of arsenic, cadmium, and PCBs to near or below the clean-up goals.



Area 2. After the first removal at Area 2, the confirmation sample (duplicate) at A2-8 had an arsenic concentration of 10.9 mg/kg. Two other samples adjacent to it, namely A2-7 and A2-9, had arsenic concentrations of 1.7 mg/kg and 1.8 mg/kg, respectively, thus slightly exceeding the clean-up goal of 1.5 mg/kg. After the second removal action (Figure 11), another confirmation soil sample was collected at location A2-8-2. Arsenic was found at a concentration of 2.2 mg/kg, 0.7 mg/kg greater than the clean-up goal but substantially less than the 10.7 mg/kg concentration detected in the duplicate of the confirmation sample collected after the first removal.

Table 2-3 lists the sample identification numbers and analytical results for each of the confirmation samples collected after the second 6-inch lift of soil was removed. Figures 10 and 11 depict the sampling results from the first and second confirmation sampling events for Area 1 and 2, respectively. It shows that the two soil removals were successful in reducing contaminant levels to near or below the clean-up goals. Actual laboratory reports are included in Appendix B.

Table 2-3. Analytical Results from Confirmation Soil Samples: 2nd Removal

Location Number	Sample ID	PCBs	Chlordane	Arsenic	Cadmium
Area 1		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
A1-4-2	A40-A1-CS-204-D0.0	ŇA	` NA	3,1	NA
A1-5-2	A40-A1-CS-205-D0.0	NA	NA	ND	ND
A1-8-2	A40-A1-CS-208-D0.0	NA	NA	1.2	NA
	A40-A1-CS-308-D0.0 (Dup)	NA	NA	2.0	NA
A1-9-2	A40-A1-CS-209-D0.0	0.13	NA	0.53J	0.10J
A1-10-2	A40-A1-CS-210-D0.0	0.45	NA	2.2	NA
A1-12-2	A40-A1-CS-212-D0.0	NA	NA	0.55J	NA
A1-13-2	A40-A1-CS-213-D0.0	NA	NA	0.82J	NA
A1-14-2	A40-A1-CS-214-D0.0	ND	NA	1.1	NA
A1-15-2	A40-A1-CS-215-D0.0	NA	NA	0.96J	NA
Area 2					
A2-8-2	A40-A2-CS-208-D0.0	NA	NA	2.2	NA

Note: Shaded values indicate those concentrations that exceed clean up goals

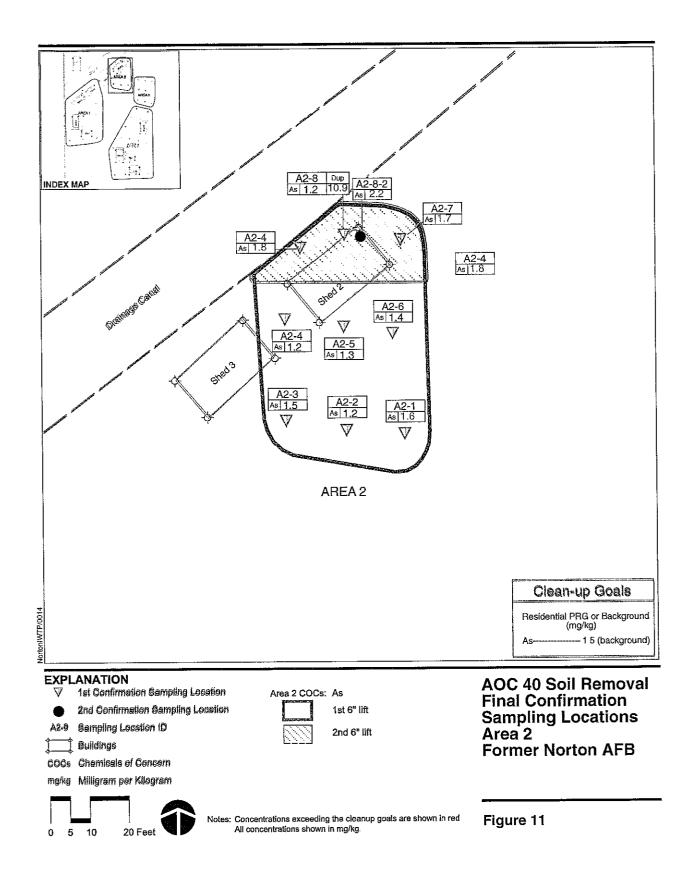
Dup = duplicate sample
J = estimated value
mg/kg = milligram per kilogram
NA = not analyzed

NA = not analyzed ND = not detected

PCB = polychlorinated biphenyl

2.4 QUALITY CONTROL/QUALITY ASSURANCE

Quality assurance/quality control (QA/QC) reviews of the laboratory analytical data discussed above were performed as specified in the QA/QC section of the work plan (Earth Tech 2003). The laboratory data were reviewed by the Earth Tech QA/QC manager to ensure conformance with the QA/QC specifications. The data were reviewed for conformance procedures, effort levels, acceptance limits, and any corrective actions required. These procedures were followed to ensure that the data quality objectives (DQOs) as detailed in the work plan (Earth Tech 2003) were met. The data collected during the field investigation are being used to document the soil conditions at AOC 40 now that the remedial activities have been completed.



For the confirmation samples collected and analyzed by a fixed laboratory, a specific data validation was conducted. Based on the results of the validation, none of the samples was classified as unusable. The sample identified as A40-A2-CS-008-D0 0 and its duplicate were analyzed for arsenic, and the results were in poor agreement. However, additional remedial action was taken based on the higher concentration of arsenic reported in the duplicate sample.

No ambient or equipment rinsate samples were collected since the sampling equipment consisting of plastic scoops and plastic bags were disposed after each soil sample was collected

Field activities and other pertinent information was documented in a waterproof, permanently bound field logbook with consecutively numbered pages. Entries were entered with waterproof black ink, and signed by the person recording the information. Recorded information in the logbook includes the following, where appropriate:

- Names of each person on the field team along with a field title.
- · Weather conditions and other environmental conditions
- General description of daily field activities and associated times of occurrence
- · Estimates of quantity of soil removed
- Date of entry, collection location, time, and identification for all samples collected

All sample containers had sample identification labels attached immediately after the sample had been collected. Each label displayed the pertinent information about the sample, including the identification number, the date and time of collection, identification of the sample collector, the sample matrix, preservatives used, and the required analyses.

CoC procedures were used to document and identify each sample, its handling, and possession, including the time from collection through the arrival at the laboratory for analysis. The CoC forms clearly identified the project name, the samplers or sample collectors, the sample identification (ID), date and time of collection, the matrix, numbers and types of containers, and the analyses required. In addition, each CoC provided sufficient signature spaces to properly account for each transfer point and the person responsible. A laboratory signature space was used to show acceptance of the samples by the laboratory. After the samples and CoCs were placed in iced-filled coolers, custody seals consisting of strips of adhesive paper were used to show that the samples not been tampered with during transport

2.5 WASTE MANAGEMENT

Management of waste soil produced during the removal, sampling, and restoration activities was performed such that all regulatory requirements were met. The amount of waste generated and handled was minimized during all phases of the work performed. All solid waste such as building debris, concrete, and vegetation was transported off site as it was collected. Waste soil generated during soil removal operations was placed into stockpiles adjacent to each of the four removal areas.

Composite soil samples from each of the stockpiles were collected for waste soil profiling and disposal classification. Each of the four composite samples were profiled for TPH as gasoline, diesel, and motor oil; SVOCs; pesticides; PCBs; and California priority pollutant metals. Analytical results indicated that no pesticides or SVOCs were detected. No metals were detected at concentrations that exceed unrestricted

disposal requirements. Gasoline, diesel, and motor oil were not detected. An unknown hydrocarbon was found in all four samples at concentrations ranging from 130 to 230 mg/kg. Finally, PCBs were detected in all four samples and varied in concentration from a low of 0.046 mg/kg to a high of 0.17 mg/kg. Based on the analytical results, the soil was determined to be nonhazardous, and was transported under nonhazardous waste manifests to a nearby soil reclamation facility. Approximately 660 tons of soil were removed from the site.

Asphalt, concrete, metal waste, and plant/tree debris was classified as nonhazardous waste and was transported off site by the subcontractor to an approved waste disposal facility or recycling center. Plant/tree debris included sod/soil, palm tree frawns, and other green waste from the golf course. In the past, the golf course maintenance department removed tree and plant debris as well as sod/soil from the golf course. This material was apparently placed on the east side of the site in small mounds. During the soil excavation, loading and disposal of this material was also removed and disposed properly

2.6 SITE RESTORATION

Site leveling occurred following removal of building debris, excavation, and waste soil. A front-mounted straight blade on a rubber-wheeled tractor was used to level and smooth the surface of the excavation areas. The overall grade of the side was preserved; however, no material was brought to the site for backfilling the excavations. Any leftover building material or other demolition debris was collected and disposed off site

3.0 REMEDIAL ACTION PERFORMANCE

The following sections summarize and discuss the effectiveness of the remedial actions performed at AOC 40. They provide data regarding the soil removal action and confirmation sampling results, and an evaluation of achievement of the clean-up objectives as well as compliance with regulatory requirements.

3.1 SOIL REMOVAL SUMMARY

The four excavations at AOC 40 yielded approximately 440 cubic yards or 660 tons of waste soil. The soil was profiled and disposed/recycled at a properly permitted disposal facility. Figure 5 shows the approximate final configuration of the four excavations as well as the outline of the additional soil removed at Areas 1 and 2. The final depth of the excavations for Areas 1 and 2 was deeper in some parts than what was proposed in the WP due to some COC concentrations exceeding clean-up goals after the initial confirmation sample were collected. The total depth of removal for the four excavations was approximately 6 inches, except for certain portions of Areas 1 and 2 where an additional 6-inch lift was performed. Details of the additional removal in Areas 1 and 2 are shown in Figures 10 and 11.

It appears that the arsenic, cadmium, chlordane, and PCB contamination found at the site was likely a result of past golf course personnel performing duties for the maintenance of the turf. Golf courses commonly use pesticides and herbicides to control both insect activity and weed growth. The contamination at AOC 40 may have occurred during the storage, mixing, and use of these compounds. Based upon past studies (CDM 1995a, 1996) and this remedial action, contaminants were found to be confined to soil in the near-surface (12 inches or less). That the site was used as a golf course maintenance area would suggest that any contaminants in the soil would likely be shallow since only small quantities of the compounds came in contact with the soil.

3.1.1 Confirmation Sampling Evaluation

Phase I (First Removal)

A 6-inch soil lift was performed on each of the designated areas, and after establishment of confirmation sample locations, confirmation soil samples were collected and analyzed for the COCs established for each of the areas. A total of 55 confirmation soil samples, including 7 duplicates were collected from grids established within each of the 4 areas when the 6-inch lift was completed. Figures 6 through 9 display the results.

Area 1. Analytical results indicated that either one or more of the COCs arsenic, cadmium, or PCB concentrations exceeded clean-up goals in eight sampling locations. Arsenic was detected at a concentration exceeding the clean-up goal of 1.5 mg/kg in eight samples with a maximum concentration of 39.5 mg/kg in sample A1-CS-014-D0.0. Cadmium was detected at a concentration exceeding the clean-up goal of 9 0 mg/kg in two samples with a maximum concentration of 15.9 mg/kg in sample A1-CS-009-D0.0. PCBs were detected at concentrations exceeding the clean-up goal of 0.22 mg/kg in three samples with a maximum concentration of 3.8 mg/kg in sample A1-CS-010-D0.0.

Area 2. Analytical results indicated that arsenic exceeded the clean-up goal at four sampling locations and was detected at a maximum concentration of 10 9 mg/kg in duplicate sample A2-CS-108-D0.0; however, the original sample found arsenic at only 1.2 mg/kg, well below the clean-up goal of 1.5 mg/kg.

- Area 3. Analytical results indicated that arsenic slightly exceeded the clean-up goal at 4 sampling locations. It was detected at a maximum concentration of 2 2 mg/kg in sample A3-CS-006-D0.0, thus exceeding the clean-up goal of 1.5 mg/kg
- **Area 4**. Analytical results indicated that arsenic concentrations slightly exceeded clean-up goals in 10 sampling locations. It was detected at a maximum concentration of 3 0 mg/kg in sample A4-CS-016-D0.0, thus exceeding the clean-up goal of 1 5 mg/kg.

Phase II (Second Removal)

Based upon the first round of confirmation samples it was decided that an additional 6-inch soil lift would be removed on selected portions of Areas 1 and 2 to further reduce concentrations of COCs that exceeded the clean-up goals. Areas 3 and 4 only had arsenic at concentrations slightly exceeding the established background and thus additional soil removal was not considered necessary. After the second removal was complete, those sampling locations that contained the COC exceedances were reestablished and a total of 11 additional confirmation samples, including 1 duplicate, were collected from the these locations. Figures 10 and 11 display the results.

- **Area 1.** Following additional soil removal, a total of ten confirmation samples, including one duplicate, were collected in the area where the second lift was performed. The samples were analyzed for only those COCs that were found to be above the clean-up goal in that location's original confirmation sample. Of the ten samples, only two had detections of arsenic exceeding clean-up goals, with a maximum concentration of 3.1 mg/kg found at sample A1-CS-204-D0.0, and 2.2 mg/kg found at sample A1-CS-210-D0.0. Of the ten samples, only one had PCBs exceeding the clean-up goal of 0.22 mg/kg, with a concentration of 0.45 mg/kg found at sample A1-CS-210-D0.0.
- Area 2. Following additional soil removal, one confirmation sample was collected in that portion of Area 2 where the second lift was performed. The sample was analyzed for arsenic only. For sample A2-CS-208-D0.0 arsenic was detected at a concentration of 2.2 mg/kg, slightly above the clean-up goal.

3.2 POST-REMEDIAL ACTION RISK ANALYSIS

3.2.1 Human Health Risk Assessment

Post-remedial human health risk was examined using the data from final confirmation samples collected from each of the four areas. Analytical results obtained after the first removal were omitted from the analysis if soil from that location was removed during the second removal. Final confirmation samples were collected at those locations and the resulting analytical data were incorporated into the risk model. Model scenarios included both industrial worker and child/adult residents. The analysis was conducted using those COPCs established during previous investigations. COPCs for this site that exceeded residential PRGs or established background, after the first removal, include the metals arsenic and cadmium, and PCBs.

The metal arsenic is problematic in that the established background for the entire former base is 1.5 mg/kg, and exceeds the California modified residential PRG of 0.39 mg/kg. Therefore, results from risk analysis would show some degree of increased risk even if no contamination was contributed from site activities. For AOC 40, the mean value of arsenic based on post-remedial confirmation sampling is 1.3 mg/kg, which is below the background but above the modified PRG. The 95% upper confidence limit (UCL) of the mean is 1.9 mg/kg, or just above the background concentration. This suggests that arsenic contamination at AOC 40 is more a result of natural occurrences rather than past activities associated with

the site. The exposure point concentration (EPC) used for the risk model was the 95% UCL value for arsenic. For the metal cadmium, an EPC of 8.2 mg/kg was used based on the maximum detected concentration for cadmium rather than the UCL.

Arochlor-1260 and Arochlor-1254 were the only post-remedial PCBs detected at AOC 40. A 95% UCL based EPC of 0.014 mg/kg for Arochlor-1260 and 0.13 mg/kg for Arochlor-1254 were used in the risk model.

Based on the EPCs noted above, both industrial and residential reuse scenarios were modeled under the risk analysis. Under a hypothetical industrial reuse scenario, a residual cancer risk of 1.0 X 10⁻⁶ for adult workers still remains at the site. This is equal to the excess cancer risk point of departure. The Hazard Index (HI) for the adult industrial worker is 0.02, well below the 1.0 departure point.

Using the same EPCs, a residential scenario was modeled. The child excess cancer risk is calculated as 9.5 X 10⁻⁶ and the adult excess cancer risk is 1.2 X 10⁻⁶. The combined child/adult excess cancer risk is 1.1 X 10⁻⁵ resulting in a residual risk in the mid to lower portion of the risk management range. The non-cancer HI for children is 0.8 and the HI for adults is 0.027. Both of these values are below the HI point of departure value of 1.0. Risk tables with both industrial and residential calculations are contained in Appendix C

As noted above, the presence of naturally occurring arsenic at this site is contributing most of the cancer risk in the model. For residential reuse, the metal arsenic alone contributes 8.7 X 10⁻⁶ to excess cancer risk for children, and 1.08 X 10⁻⁶ to excess cancer risk for the adult receptor.

3.3 REMEDIAL ACTION EFFECTIVENESS

The purpose of this removal action was to reduce concentrations of arsenic, cadmium, PCBs, and chlordane in soil to levels at or below established cleanup goals. Based upon the historical investigations and data from this remedial action it appears that some of the contamination found at AOC 40 was a direct result of golf course maintenance operations. Removal areas were established based on the COCs detected during previous investigations.

Analytical data from confirmation samples are a definitive way to measure the effectiveness of the removal action. For AOC 40, confirmation soil sample data at Areas 1 through 4 clearly show that soil removal has reduced the concentrations of all COCs to below or near their respective cleanup goals

The removal action cleanup goal for PCB was based upon the residential PRG of 0.22 mg/kg Only a single PCB confirmation result (located in Area 1) exceeded the residential PRG at 0.45 mg/kg

The removal action cleanup goal for arsenic is based on the previously established background concentration of 1.5 mg/kg for the former base. The background value was developed using a range of values from 0.24 - 1.8 mg/kg from samples collected at points all around the former base (CDM Federal, 1995B). The background concentration exceeds the California modified PRG concentration of 0.39 mg/kg. The average arsenic concentration of the remaining soil at the site is 1.35 mg/kg at Area 1, 1.5 mg/kg at Area 2, 1 6 mg/kg at Area 3, and 1.6 mg/kg at Area 4. These average concentrations show that the site contributes essentially no additional cancer risk above background from past activities.

Chlordane and cadmium were not found at concentrations exceeding the cleanup goals.

The analytical results indicate little or no remaining contamination. Risk analysis shows that no apparent risk is present for industrial workers at the site, and a low excess cancer risk may exist for children and adults under a hypothetical residential development. Most of the risk is contributed from background arsenic concentrations, not by past activities at the site. In the future this site and surrounding area will likely be developed into a commercial or industrial area and not residential development. Therefore, based on the data presented in this report, it is recommended that AOC 40 be closed and no further action taken.

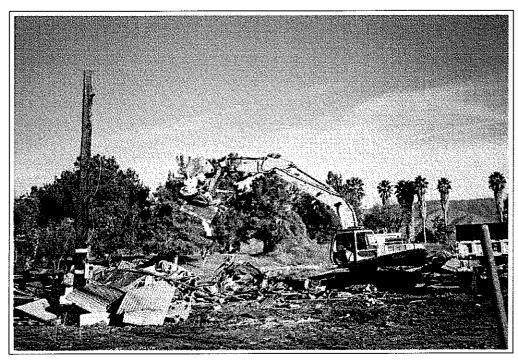
4.0 REFERENCES

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APPENDIX A PHOTOS



Photograph 1-1. Shed Demolition



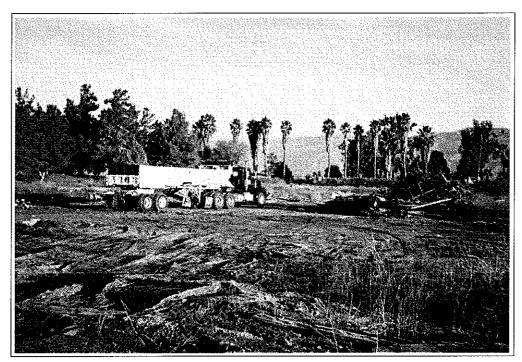
Photograph 1-2. Shed Demolition



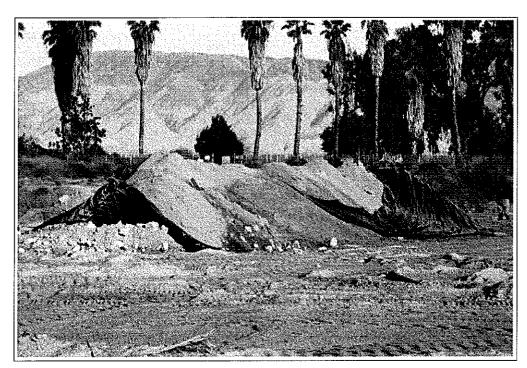
Photograph 1-3. Shed Debris



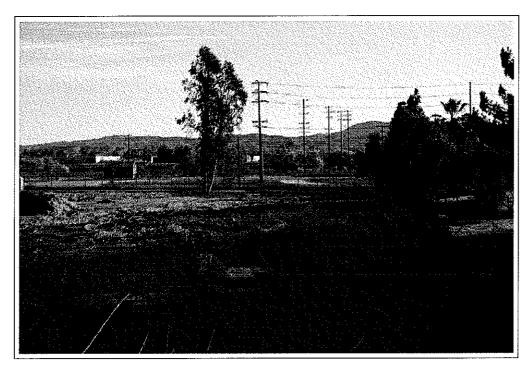
Photograph 1-4. Shed Debris



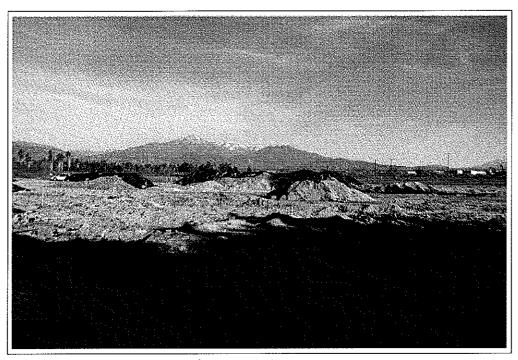
Photograph 1-5. Shed Debris



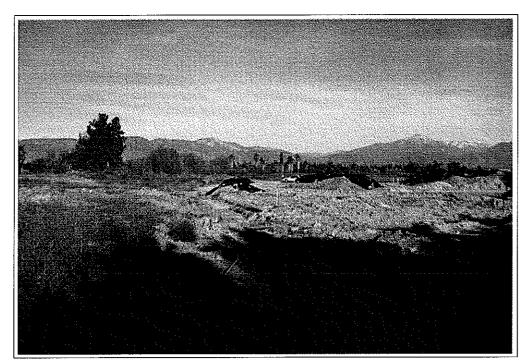
Photograph 1-6. Waste Soil



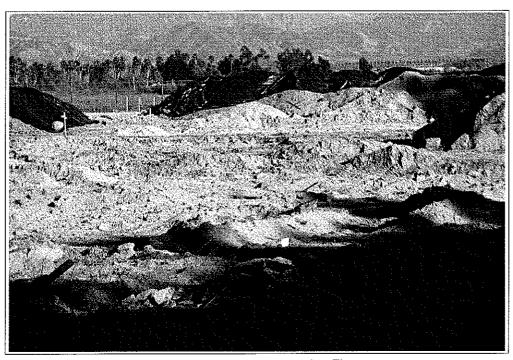
Photograph 1-7. AOC 40: Area 1 Soil Removal



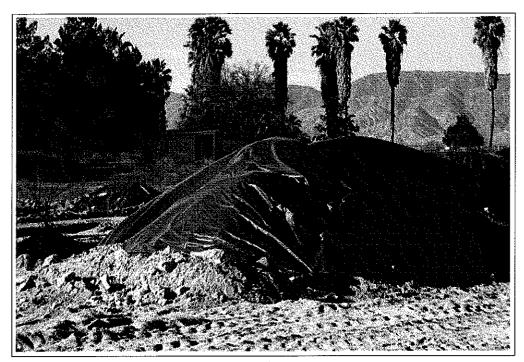
Photograph 1-8. AOC: Area 2 Soil Removal



Photograph 1-9. AOC 40: North Drainage Canal



Photograph 1-10. AOC 40: Area 1 Sampling Location Flags



Photograph 1-11. AOC 40: Area 4 Waste Soil



Photograph 1-12. AOC 40: Post-Removal Restoration

APPENDIX B LABORATORY ANALYTICAL DATA

FINAL DATA - AOC 40 (Page 1 of 21)

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	Base	NORTN	z	NORTN		NORTN	_	NORTN		NORTN		NORTN	_	NORTN		NORTN	N.	NORTN	
	Site	ΑN		Ϋ́		NA		Α̈́		Α̈́		Ϋ́		¥		NA	<u>z</u>	~	
	Point	A40-A	A40-A1-CS-01	A40-A1-CS-02	2S-02	A40-A1-CS-03		140-A1-1	A40-A1-CS-04	A40-A1	A40-A1-CS-04	A40-A1	A40-A1-CS-05	A40-A1-CS-05	2S-05	A40-A1-CS-05		A40-A1-CS-06	90-
	Sampling Date	1/9/20	1/9/2004 09:05	1/9/2004 09:10	09:10	1/9/2004 09:15		1/9/2004 09:18	: 09:18	3/5/200	3/5/2004 07:25	1/9/200	1/9/2004 09:21	1/9/2004 09:21	09:21	3/5/2004 07:35		1/9/2004 09:25	:25
	Sample Depth						1			,		,					,		
	Sample Type	ž		ž		ž		F		ž		ź		FR1		ž	<u>z</u>	_	
	Field Sample	A40-A3	-CS-001-D0	.0 A40-A1-C	S-002-D0.0	A40-A1-CS-0	03-D0.0	V40-A1-C	S-004-D0.0	A40-A1-	CS-204-D0.t	7 A40-A1-	CS-005-D0.0	A40-A1-C	S-105-D0.0	440-41-CS-001-D0.0 A40-A1-CS-002-D0.0 A40-A1-CS-003-D0.0 A40-A1-CS-004-D0.0 A40-A1-CS-004-D0.0 A40-A1-CS-005-D0.0 A40-A1-CS	05-D0.0 A	10-A1-CS-0	0.00-80
	Lab Sample	E4A1;	30167-001	E4A1301	167-002	E4A130167	7-003 E	=4A1307	167-004	E4C06	0186-001	E4A13(1167-005	E4A1301	167-016	E4A130167-001 E4A130167-002 E4A130167-003 E4A130167-004 E4C060186-001 E4A130167-005 E4A130167-016 E4C060186-002 E4A130167-006	-002 E	1A130167	900-
	PVC / Run	PR/1		PR / 1		PR/1	<u>+</u>	PR/1		PR / 1		PR/1		PR/1		PR / 1	<u>а</u>	PR/1	
	Status	Validated	ted	Validated	7.	Validated	<u></u>	Validated	ď	Validated	pe,	Validated	₽¢	Validated	7	Validated	<u>></u>	Validated	
Analyte	Method	it Result	OA (RL, DF)	Result	IRL. DFI	Result QA R	r, DFI	esult QA	(Rt. DF)	Result	A RL. DFI	Result	A (RL, DF)	Result QA	RL, OF	Result QA (R	L. DFI	sult QA	ř. 0F1
moisture, percent	moisture, percent E160.3-MOD % 5.7 (0.10, 1] 2.6 (0.10, 1] 8.8 (0.10, 1] 5.7 (0.10, 1] 5.8 (0.10, 1] 5.8 (0.10, 1] 5.6 (0.10, 1] 6.0	5.7	0.10	1] 2.6	[0.10, 1]	8.8	5.10, 1] 3	1.7	[0.10, 1]	5.1	[0.10, 1	17.8	[0.10, 1]	8.2	[0.10, 1]	2.8	.10, 1] 5.] 9	[0.10, 1]

FINAL DATA - AOC 40 (Page 2 of 21)

	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	ĄN	NA	NA	NA	NA	AN	NA	NA	NA
	Point	A40-A1-CS-07	A40-A1-CS-08	A40-A1-CS-08	A40-A1-CS-08	A40-A1-CS-09	A40-A1-CS-09	A40-A1-CS-10	A40-A1-CS-10	A40-A1-CS-11
	Sampling Date	1/9/2004 09:30	1/9/2004 09:35	3/5/2004 07:40	3/5/2004 07:40		3/5/2004 07:30	1/9/2004 09:43	6/24/2004 11:30	1/9/2004 09:45
	Sample Depth		,	,	1		1			â
	Sample Type	ž	ž	ž	FR1	Σ	ž	N.	Z	7
	Field Sample	A40-A1-CS-007-D0.	0 A40-A1-CS-008-D0.C	A40-A1-CS-208-D0.0	A40-A1-CS-308-D0.0	A40-A1-CS-009-D0.0	A40-A1-CS-209-D0.0	A40-A1-CS-010-D0.0	440-A1-CS-007-D0.0 A40-A1-CS-008-D0.0 A40-A1-CS-208-D0.0 A40-A1-CS-308-D0.0 A40-A1-CS-009-D0.0 A40-A1-CS-009-D0.0 A40-A1-CS-007-D0.0 A40-A1-CS-010-D0.0 A40-A1-CS	440-A1-CS-011-D0.0
	Lab Sample	E4A130167-007	E4A130167-008	E4C060186-003	E4C060186-009	E4A130167-009	E4C060186-004	E4A130167-010	E4A130167-007 E4A130167-008 E4C060186-003 E4C060186-009 E4A130167-009 E4C060186-004 E4A130167-010 E4F250279-001 E4A130167-010	E4A130167-011
	PVC / Run	PR/1	PR / 1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1	PR / 1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method Unit	Unit Result as (RL, DF) Result as IRL, D	Result QA IRL, DFI	Result QA [RL, OF]	Result OA (RL, DF)	Result QA IRL, DFI	Result OA (RL, DP)	Result GA IRL, DF	DFI Result DA RL, DFI RESULT DA RL, DFI RESULT DA RL, DFI	Result OA [PL, DF]
moisture, percent	moisture percent E160.3-MOD % [1.2 [0.10, 11]5.8	1.2 [10.10.1	1 5.8 [0.10.1]	12.8 [10.10.11	5.2 [0.10, 1]	1,3 [10,10, 1]	4.5 [0.10, 1]	4.7 [10.10, 1]	0.112.8 [0.10.1115.2 [0.10.1111.3 [0.10.1114.5 [0.10.1114.7 [0.10.1116.50 [0.10.1114.1 [10.10.11	4.1 [0.10, 1]

FINAL DATA - AOC 40 (Page 3 of 21)

	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	NA	NA	AN	NA	NA	NA AN	NA	NA	AN
	Point	A40-A1-CS-12	A40-A1-CS-12	A40-A1-CS-13	A40-A1-CS-13	A40-A1-CS-13	A40-A1-CS-14	A40-A1-CS-14	A40-A1-CS-15	A40-A1-CS-15
	Sampling Date	1/9/2004 09:50	3/5/2004 08:00	1/9/2004 09:55	1/9/2004 09:55	3/5/2004 08:05	1/9/2004 10:01	3/5/2004 08:40	1/9/2004 10:05	3/5/2004 08:44
	Sample Depth							,		
	Sample Type	ž	ž	ź	FR1	ž	ž	N	ž	Z
	Field Sample	A40-A1-CS-012-D0.0	40-A1-CS-012-D0.0 A40-A1-CS-212-D0.0 A40-A1-CS-013-D0.0 A40-A1-CS-213-D0.0 A40-A1-CS-213-D0.0 A40-A1-CS-014-D0.0 A40-A1-CS-214-D0.0 A40-A1-CS-014-D0.0 A40-A1-CS-	A40-A1-CS-013-D0.0	A40-A1-CS-113-D0.0	A40-A1-CS-213-D0.0	A40-A1-CS-014-D0.0	A40-A1-CS-214-D0.0	A40-A1-CS-015-D0.0	A40-A1-CS-215-D0.0
	Lab Sample	E4A130167-012	E4A130167-012 F4C060186-005 E4A130167-013 E4A130167-017 E4C060186-006 E4A130167-014 E4C060186-007 E4A130167-015 E4C060186-008	E4A130167-013	E4A130167-017	E4C060186-006	E4A130167-014	E4C060186-007	E4A130167-015	E4C060186-008
	PVC / Run	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1	PR / 1	PR / 1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method Unit	Method Unit Result DA RR., DF)	Result QA [RL, DF]	Result QA [RL. DF]	Result QA [RL, DF]	Result QA [RL, DF]	Result QA [RL, DF]	Result QA RL. DFI	Result QA IRL. DFI	Result GA [RL, DF]
moisture, percent	noisture, percent E160.3-MOD % 7.0	7.0 [0.10, 1] 1.6	1.6 [[0.10, 1] 6.5	6.5 [0.10, 1] 6.7	6.7 [0.10, 1]	7.2 [0.10, 1]	3.4 [0.10, 1]	4.6 [0.10, 1]	[0.10, 1] [7.2 [0.10, 1][3.4 [0.10, 1][4.6 [0.10, 1][4.8 [0.10, 1][7.0	7.0 [0.10, 1]

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	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	NA	NA	AN	Ą	¥	NA	NA	AA	NA
	Point	A40-A2-CS-01	A40-A2-CS-02	A40-A2-CS-03	A40-A2-CS-04	A40-A2-CS-05	A40-A2-CS-06	A40-A2-CS-07	A40-A2-CS-08	A40-A2-CS-08
	Sampling Date	1/9/2004 10:25	1/9/2004 10:30	1/9/2004 10:34	1/9/2004 12:45	1/9/2004 12:50	1/9/2004 12:55	1/9/2004 13:00	1/9/2004 13:03	1/9/2004 13:03
	Sample Depth	,					و			
	Sample Type	Z	Σ	ž	Z	Z	ž	ž	Ξ	FR1
	Field Sample	A40-A2-CS-001-D0.0	A40-A2-CS-002-D0.0	440-A2-CS-001-D0.0 A40-A2-CS-002-D0.0 A40-A2-CS-003-D0.0 A40-A2-CS-003-D0.0 A40-A2-CS-005-D0.0 A40-A2-CS-005-D0.0 A40-A2-CS-008-D0.0 A40-A2-CS	A40-A2-CS-004-D0.0	A40-A2-CS-005-D0.0	A40-A2-CS-006-D0.0	A40-A2-CS-007-D0.0	A40-A2-CS-008-D0.0	A40-A2-CS-108-D0.0
	Lab Sample	E4A130167-018	E4A130167-019	E4A130167-018 E4A130167-019 E4A130167-020 E4A130167-021 E4A130167-022 E4A130167-023 E4A130167-024 E4A130167-025 E4A130167-027	E4A130167-021	E4A130167-022	E4A130167-023	E4A130167-024	E4A130167-025	E4A130167-027
	PVC / Run	PR/1	PR / 1	PR / 1	PR/1	PR/1	PR/1	PR/1	PR / 1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Analyte Method Unit Result as IRL DF RES	Result OA RL. DFI	Result QA (RL, DF)	Result QA [RL, DF]	Result QA IRL, DF	Result QA [RL, DF]	Result QA (RL, DF)	Result GA [RL, DF]	Result QA IRL. DF!	Result QA [RL, DF]
moisture, percent	E160.3-MOD %	6.3 [0.10, 1]	6.2 (0.10.1)	10.10 115.4 10.10 115.6 10.10 115.0 10.10 113.9 10.10 113.7 110.10 113.3 10.10 112.9 10.10 11	5.6 [0.10, 1]	5.0 [0.10, 1]	3.9 [0.10, 1]	3.7 [10,10,1]	3.3 [0.10, 1]	2.9 [0.10, 1]

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									, manual 1	
	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	ΑN	ΑA	NA	NA	NA	NA NA	NA	ΝΑ	NA
	Point	A40-A2-CS-08	440-A2-CS-08 A40-A2-CS-09	A40-A3-CS-01	A40-A3-CS-02	A40-A3-CS-03	A40-A3-CS-04	A40-A3-CS-05	A40-A3-CS-06	A40-A3-CS-07
	Sampling Date	3/5/2004 07:40	1/9/2004 13:07	1/9/2004 13:10	1/9/2004 13:15	1/9/2004 13:19	1/9/2004 13:21	1/9/2004 13:25	1/9/2004 13:26	1/9/2004 13:30
	Sample Depth		,							
	Sample Type	ž	ž	Z	N	ž	ž	Z	Z	ž
	Field Sample	A40-A2-CS-208-E	A40-A2-CS-208-D0.0 A40-A2-CS-009-D0.0 A40-A3-CS-001-D0.0 A40-A3-CS-002-D0.0 A40-A3-CS-003-D0.0 A40-A3-CS-004-D0.0 A40-A3-CS-005-D0.0 A40-A3-CS-007-D0.0	A40-A3-CS-001-D0.0	A40-A3-CS-002-D0.0	A40-A3-CS-003-D0.0	A40-A3-CS-004-D0.0	A40-A3-CS-005-D0.0	A40-A3-CS-006-D0.0	A40-A3-CS-007-D0.0
	Lab Sample	E4C060186-01	E4C060186-010 E4A130167-026 E4A130167-028 E4A130167-029 E4A130167-030 E4A130167-031 E4A130167-032 E4A130167-033 E4A130167-034	E4A130167-028	E4A130167-029	E4A130167-030	E4A130167-031	E4A130167-032	E4A130167-033	E4A130167-034
	PVC / Run	PR/1	PR/1	PR/1	PR / 1	PR / 1	PR / 1	PR/1	PR/1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method	it Result QA [Rt. Df	QA IRL.	Result QA RL, DF]	Result QA [RL, DF]	Result QA [RL, DF1	Result QA RL, DF1	Result QA (Rt., DF)	Result QA [RL, DF]	Result QA (RL, DF)
moisture percent	noisture percent E160.3-MOD % 6.9 [0.10.11]4.9	6.9 [0.10]	10.1	0 1144 10 10 10 11 1147 10 10 10 11 113 10 10 10 11 1153 10 10 10 11 115.2 10 10 11 114.7 10 10 10 11	4.4 [0.10, 1]	3.3 [10.10, 1]	3.1 [10,10, 1].	5.3 [0.10, 1]	5.2 [10,10, 1]	4.7 [10,10, 1]

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	Base	NORTN	NORTN	Ī	NORTN	NORTN	Ñ.	NORTN	NORTN		NORTN	Ž	NORTN	Ž	NORTN
	Site	¥ V	Ϋ́		⋠	NA	¥ Z		<u>¥</u>		ΑN	<u>z</u>		ż	-
	Point	A40-A3-CS-07	7 A40-A3-CS-08		A40-A3-CS-09	A40-A4-CS-01		A40-A4-CS-02		A40-A4-CS-03	A40-A4-CS-04		A40-A4-CS-05		A40-A4-CS-05
	Sampling Date	1/9/2004 13:30	0 1/9/2004 13:35		1/9/2004 13:40	1/9/2004 13:45		1/9/2004 13:50			1/9/2004 13:54		1/9/2004 13:56		1/9/2004 13:56
	Sample Depth	•							!					•	
	Sample Type	FR1	Σ	_	Z	Σ	z		Ξ		ž	<u>z</u>	<u>y-</u>	芷	FR1
	Field Sample	A40-A3-CS-107	-D0.0 A40-A3-CS	+008-D0.0	440-A3-CS-009-D0.	3 A40-A4-CS-001-I	20.0 A40-	A4-CS-002-D(0.0 A40-A4-(CS-003-D0.0	A40-A4-CS-00	04-D0.0 Az	40-A4-CS-00£	5-D0.0 A4	440-A3-CS-107-D0.0 A40-A3-CS-008-D0.0 A40-A3-CS-008-D0.0 A40-A4-CS-001-D0.0 A40-A4-CS-002-D0.0 A40-A4-CS-003-D0.0 A40-A4-CS
	Lab Sample	E4A130167-0	37 E4A13016	37-035	E4A130167-037 E4A130167-035 E4A130167-036 E4A130167-038 E4A130167-039 E4A130167-040 E4A130167-041 E4A130167-042 E4A130167-044	E4A130167-03	8 E4A	130167-039	E4A130	1167-040	E4A130167	-041 E	4A130167-C	242 E	1A130167-044
	PVC / Run	PR/1	PR / 1		PR/1	PR / 1	PR/1	11	PR / 1		PR/1	ā	PR/1	ā	PR/1
	Status	Validated	Validated		Validated	Validated	Vali	Validated	Validated)Oé	Validated	<u> </u>	Validated	Š	Validated
Analyte	Analyte Method Unit Result OA FRL, DFI Result OA FRL, D	Result QA (Rt.,	DFI Result QA	(RL, DF)	tesuit an IRL, DFI	Result QA [RL. D.	Fl Resul	t QA (RL, DF)	Result	A RL, OF	Result OA (RI	L, DFJ Re	ssult QA (Rt.	PO-	sult QA (RL, DF)
moisture, percent	E160.3-MOD %	5.4 [0.1	0, 1] 3.6	[0.10, 1]	1.3 [0.10, 1	1 4.0 [0.10]	1 1 4.0	[0.10]	1] 4.9	[0.10, 1]	4.7 (0	1.10, 1] 2.	4 .	10, 11 2.	0, 1] 3.3 [0.10, 1] 4.0 [0.10, 1] 4.0 [0.10, 1] 4.9 [0.10, 1] 4.7 [0.10, 1] 2.9 [0.10, 1] 2.9 [0.10, 1]

FINAL DATA - AOC 40 (Page 7 of 21)

	Base	NORTN		NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	Ą		¥N Y	NA	NA	NA	NA	NA	ΑN	ΑN
	Point	A40-A4-CS-06		A40-A4-CS-07	A40-A4-CS-08	A40-A4-CS-09	A40-A4-CS-10 A40-A4-CS-11 A40-A4-CS-12	A40-A4-CS-11	A40-A4-CS-12	A40-A4-CS-12 A40-A4-CS-13	A40-A4-CS-13
	Sampling Date	1/9/2004 14:00	·	1/12/2004 09:10	1/12/2004 09:14	1/12/2004 09:18	1/12/2004 09:14 1/12/2004 09:18 1/12/2004 09:21 1/12/2004 09:26 1/12/2004 09:29	1/12/2004 09:26	1/12/2004 09:29	1/12/2004 09:29 1/12/2004 09:33	1/12/2004 09:33
	Sample Depth		•	,		٠,					
	Sample Type	ž		N	ž	Z	Σ	Σ	ž	FR1	Σ
	Field Sample	A40-A4-CS-	0.00-900	A40-A4-CS-007-D0.0	A40-A4-CS-008-D0.(A40-A4-CS-009-DO	44D.44.CS-006-D0.0 A40.A4-CS-007-D0.0 A40-A4-CS-008-D0.0 A40-A4-CS-009-D0.0 A40-A4-CS-010-D0.0 A40-A4-CS-011-D0.0 A40-A4-CS-013-D0.0	A40-A4-CS-011-D0.0	A40-A4-CS-012-D0.0	0 A40-A4-CS-112-D0.0	A40-A4-CS-013-D0.0
	Lab Sample	E4A13016	7-043	E4A130167-043 E4A130177-001	E4A130177-002	E4A130177-003	E4A130177-002 E4A130177-003 E4A130177-004 E4A130177-005 E4A130177-007 E4A130177-017 E4A130177-007	E4A130177-005	E4A130177-006	E4A130177-017	E4A130177-007
	PVC / Run	PR/1		PR/1	PR / 1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1
	Status	Validated		Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method Un	it Result QA	TRL, DFI	Result OA RL. DFI	Result QA RL, DFI	Result QA [RL, DF]	Result QA IRL, DF1	Result QA RL, DF]	Result QA [RL, DF]	Result QA [RL, DF]	Result QA IRL. DFI
moisture, percent	E160.3-MOD %	6.8	10.10, 11	2.0 [0.10, 1]	7.1 [10,10, 1	1 5.1 [0.10, 1	moisiure percent E160.3-MOD % 6.8 10.10, 11 2.0 10.10, 11 7.1 10.10, 11 5.1 10.10, 11 6.0 10.10, 11 2.1 10.10, 11 4.2 10.10, 11	5.0 0.10, 11	0.60 [0.10, 1	12.1 [0.10, 1]	4.2 [0.10, 1]

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					1					
	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	NA	NA	NA	NA AM	NA	NA	NA	NA	NA
	Point	A40-A4-CS-14 A40-A4-CS-15		A40-A4-CS-16	A40-A4-CS-17	A40-A4-CS-18	A40-A4-CS-19	A40-A4-CS-19	A40-A4-CS-17 A40-A4-CS-18 A40-A4-CS-19 A40-A4-CS-20 A40-A4-CS-20	A40-A4-CS-20
	Sampling Date	1/12/2004 09:36	1/12/2004 09:36 1/12/2004 09:41 1/12/2004 09:44 1/12/2004 09:45 1/12/2004 09:45 1/12/2004 09:49 1/12/2004 09:51 1/12/2004 09:51 1/12/2004 09:51 1/12/2004 09:50 1/12/2004 09:00	1/12/2004 09:44	1/12/2004 09:45	1/12/2004 09:49	1/12/2004 09:51	1/12/2004 09:51	1/12/2004 09:56	1/12/2004 10:06
	Sample Depth		_				1	_,		
	Sample Type	ž	Z	Z	ž	ž	Z	FR1	N.	N1
	Field Sample	A40-A4-CS-014-D0.0	440-44.CS-014-D0.0 440-44-CS-015-D0.0 440-44-CS-016-D0.0 440-44-CS-017-D0.0 440-44-CS-018-D0.0 440-44-CS-019-D0.0 440-44-CS-018-D0.0 440-44-CS	A40-A4-CS-016-D0.0	A40-A4-CS-017-D0.0	A40-A4-CS-018-D0.0	A40-A4-CS-019-D0.0	A40-A4-CS-119-D0.0	A40-A4-CS-020-D0.0	A40-A4-CS-022-D0.0
	Lab Sample	E4A130177-008	E4A130177-008 E4A130177-009 E4A130177-010 E4A130177-011 E4A130177-012 E4A130177-013 E4A130177-018 E4A130177-014 E4A130177-016	E4A130177-010	E4A130177-011	E4A130177-012	E4A130177-013	E4A130177-018	E4A130177-014	E4A130177-016
	PVC / Run	PR/1	PR/1	PR / 1	PR/1	PR/1	PR / 1	PR/1	PR/1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method	t Result QA RL, DFI	Result QA IRL, DFI	Result QA RL, DF1	Result QA [RL, DF]	Result QA RL. DFI	Result QA (RL, DF)	Result QA RL, DFI	Result QA [RL, DF]	Result QA RL, DF]
moisture, percent	E160.3-MOD %	noisture, percent E180.3-MOD % 2.6 (0.10, 1114.2 (0.10, 1114.6 (0.10, 1114.7 (0.10, 1118.6 (0.10, 1115.9 (0.10, 1111.2 (0.10, 11	14.2 [0.10, 1]	7.6 [10.10, 11	4.0 [0.10, 1]	4.7 [0.10, 1]	6.6 [0.10, 1]	8.6 [0.10, 1]	5.9 [0.10, 1]	1.2 [0.10, 1]

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Sitie Point Sampling Date 1 Sample Depth Sample Type Field Sample Lab Sample PVC / Run Status Method Unit R	NA A40-A4-CS-21 1/12/2004 10:00 N1 A40-A4-CS-021-D0.0 E4A130177-015 PR / 1 Validated
a, percent E160.3-MOD	10.2 [0.10, 1]

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	Base	NORTN		NORTN		NORTN	NORTN	Z	NORTN		NORTN	_	NORTN	NORTN		NORTN	NORTN
	Site	Ϋ́		A		NA NA	Α̈́		Α̈́		AN		⋖	Ϋ́		₹	AN
	Point	A40-A1-CS-01	S-01	A40-A1-C	.S-02	A40-A1-CS-02 A40-A1-CS-03	A40-A	A40-A1-CS-04	A40-A1-	A40-A1-CS-04	A40-A1-CS-05		A40-A1-CS-05	A40-A1-CS-05		A40-A1-CS-06	A40-A1-CS-07
	Sampling Date	1/9/2004 09:05	90:60	1/9/2004 09:10	09:10	1/9/2004 09:15	1/9/20	1/9/2004 09:18	3/5/2004	3/5/2004 07:25	1/9/2004 09:21		1/9/2004 09:21	3/5/2004 07:35		1/9/2004 09:25	1/9/2004 09:30
	Sample Depth				•	ب	•				<u>.</u>						1
	Sample Type	ž		Σ		N.	ž		Σ		ž	<u>u.</u>	FR1	ž	<u>-</u>	7	ž
	Field Sample	A40-A1-C	S-001-D0.0	A40-A1-CS	-002-D0.0	A40-A1-CS-003-D	0.0 A40-A1	-CS-004-D0.	0 A40-A1-C	S-204-D0.0	A40-A1-CS-	0.003-D0.0	40-A1-CS-105-D0	.0 A40-A1-CS	3-205-D0.0	40-A1-CS-006-D0.0	440-41-CS-001-D0.0 440-41-CS-002-D0.0 440-41-CS-003-D0.0 440-41-CS-004-D0.0 440-41-CS-005-D0.0 440-41-CS
	Lab Sample	E4A13016	E4A130167-001	E4A1301	67-002	E4A130167-002 E4A130167-003	E4A13	30167-004	E4C060	186-001	E4A130167	7-005 E	4A130167-016	E4C0601	86-002 E	E44130167-004	E4A130167-007
	PVC / Run	PR/1		PR / 1		PR/1	PR/1		PR / 1		PR / 1	<u>11.</u>	PR/1	PR / 1	<u></u>	PR / 1	PR / 1
	Status	Validated		Validated		Validated	Validated	peg	Validated	Ó	Validated	<u> </u>	Validated	Validated		Validated	Validated
Analyte	Method Unit	Result QA	RL. DFI	Result	[R. DF]	Result QA IRL, DF		GA RL, DFI	Result 04	A (RL DF)	Result QA	RL, OFJ	esult QA [RL, DF]	Result QA	(RL, DF)	Result DA IRL, DF1 Result DA IRL, DF7 Result DA IRL, DF7 Result DA IRL, DF1 Result DA IRL, DF7 Result DA IRL, DF7	Result QA RL, DF1
arsenic	arsenic SW6010B mg/kg ND [1.1, 1] ND [1.0, 1] 1.2 [1.1, 1]	Q	[1.1, 1]	QN	[1.0, 1]	1.2 [1.1,	ŀ	[1.0, 1]	3.1	[1.1, 1]	2.6	11.11 12	.2 [1.1, 1	QN	11.0, 11	[1.0,1] 3.1 [1.1,1] 2.6 [1.1,1] 2.2 [1.1,1] ND [1.0,1] 1.4 [1.1,1] ND	ND [1.0, 1]
cadmium	cadmium SW6010B mg/kg 0.76 M [0.53, 1] ND	0.76 M	[0.53, 1]	QN	[0.51, 1] ND	ND [0.55, '	1] 6.6	[0.52, 1]			13.3	[0.54, 1] 11.1	1.1	[0.54, 1] ND	10.51, 1] 1.9	.9 [0.53, 1] ND	ND [0.51, 1]

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	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	Ą	NA	ΑN	NA	NA	NA	NA	NA A	AN	NA
	Point	A40-A1-CS-08	A40-A1-CS-08 A40-A1-CS-08	A40-A1-CS-08	A40-A1-CS-09	A40-A1-CS-09	A40-A1-CS-10	A40-A1-CS-10 A40-A1-CS-11	A40-A1-CS-11	A40-A1-CS-12	A40-A1-CS-12
	Sampling Date	1/9/2004 09:35	3/5/2004 07:40 3/5/2004 07:40	3/5/2004 07:40	1/9/2004 09:40	3/5/2004 07:30	1/9/2004 09:43	6/24/2004 11:30 1/9/2004 09:45	1/9/2004 09:45		3/5/2004 08:00
	Sample Depth		·						•	•	_,
	Sample Type	ž	ž	FR1	Z	ž	ž	N.	ž	N	N.
	Field Sample	A40-A1-CS-008-D0.0	A40-A1-CS-208-D0.0	A40-A1-CS-308-D0.0	A40-A1-CS-009-D0.0	A40-A1-CS-209-D0.0	A40-A1-CS-010-D0.0	A40-A1-CS-210-D0.0	440-41-CS-008-D0.0 440-41-CS-208-D0.0 440-41-CS-208-D0.0 440-41-CS-209-D0.0 440-41-CS-209-D0.0 440-41-CS-010-D0.0 440-41-CS-210-D0.0 440-41-CS	A40-A1-CS-012-D0.0	A40-A1-CS-212-D0.0
	Lab Sample	E4A130167-008	E4C060186-003	E4C060186-009	E4A130167-009	E4C060186-004	E4A130167-010	E4F250279-001	E4A130167-008 E4C060186-003 E4C060186-009 E4C060186-009 E4C060186-004 E4A130167-010 E4F250279-001 E4A130167-011 E4A130167-012 E4C060186-005	E4A130167-012	E4C060186-005
	PVC / Run	PR/1	PR/1	PR/1	PR/1	PR / 1	PR/1	PR/1	PR/1	PR/1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Method Unit	Result QA [RL, DF].	Result QA [RL, DF]	Result QA [RL. DF]	Result QA IRL, DF1	Result QA (RL, DF)	Result QA RL, DF]	Result QA [RL, DF]	Result QA (RL, DF)	Result QA [RL, DF]	Result QA RL, DF1
arsenic	SW6010B mg/kg	5.1 [1.1, 1]	1.2 [1.0, 1]	2.0 [1.1, 1]	2.6 [1.0, 1]	ND [1.0, 1]	11.6 [1.0, 1]	2.2 [1.0, 1]	arsenic SW6010B mg/kg 5.1 [1.1, 1] 1.2 [1.0, 1] 2.0 [1.1, 1] 2.6 [1.0, 1] ND [1.0, 1] 1.5 [1.0, 1] 1.6 [1.1, 1] ND [1.0, 1]	1.6 [1.1, 1]	ND [1.0, 1]
cadmium	cadmium SW6010B mg/kg 5.1	5.1 [0.53, 1] -	_	_	15.9 [0.51, 1] ND	ND [0.52, 1] 3.0	3.0 [0.52, 1] -	,	0.72 [0.52, 1] 0.62	0.62 [0.54, 1] -	

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						THE RESERVE THE PERSON NAMED IN		
	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	NA	NA	Y.	NA	NA	AN	NA
	Point	A40-A1-CS-13	A40-A1-CS-13	A40-A1-CS-13 A40-A1-CS-14	A40-A1-CS-14	A40-A1-CS-14 A40-A1-CS-15	A40-A1-CS-15	A40-A1-CS-15
	Sampling Date	1/9/2004 09:55	1/9/2004 09:55	3/5/2004 08:05	1/9/2004 10:01	3/5/2004 08:40 1/9/2004 10:05		3/5/2004 08:44
	Sample Depth		1	,			1	
	Sample Type	ž	FR1	Z	N1	Σ	N1	FN.
	Field Sample	A40-A1-CS-013-D0,0	A40-A1-CS-113-D0.0	A40-A1-CS-213-D0.0	A40-A1-CS-D13-D0.0 A40-A1-CS-113-D0.0 A40-A1-CS-213-D0.0 A40-A1-CS-014-D0.0 A40-A1-CS-214-D0.0 A40-A1-CS-015-D0.0 A40-A1-CS-215-D0.0	A40-A1-CS-214-D0.0	A40-A1-CS-015-D0.0	A40-A1-CS-215-D0.0
	Lab Sample	E4A130167-013	E4A130167-017	E4C060186-006	E4A130167-013 E4A130167-017 E4C060186-006 E4A130167-014 E4C060186-007 E4A130167-015 E4C060186-008	E4C060186-007	E4A130167-015	E4C060186-008
	PVC / Run	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated
		_	-	-		-	-	-
Analyte	Clit	Result OA (RL, DF)	Result QA [RL, DF]	Result OA (RL, DF)	Result QA (RL, DF)	Result QA [RL, DF]	Result QA [RL, DF)	Result QA [RL. DF]
arsenic	8 mg/kg	1.5 [1.1, 1]	1.3 [1.1, 1]	ND [11.1, 1]	1.5 [1.1, 1] 1.3 [1.1, 1] ND [1.1, 1] 39.5 [1.0, 1] 1.4 [1.0, 1] 2.8 [1.1, 1] ND [1.1, 1]	1.1 [1.0, 1]	2.8 [1.1, 1]	ND [1.1, 1]
cadmium	admium SW6010B mg/kg	mg/kg ND [[0.53, 1] ND	ND [0.54, 1] -	_	2.2 [0.52, 1] -	-	ND [0.53, 1] -	

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					-							
Base	0	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
Site		NA	NA AN	AN	ΑN	NA	AA	AA.	NA	NA	NA NA	NA A
Point	4	A40-A2-CS-01	A40-A2-CS-01 A40-A2-CS-02 A40-A2-CS-03	A40-A2-CS-03	A40-A2-CS-04	A40-A2-CS-05 A40-A2-CS-06	A40-A2-CS-06	A40-A2-CS-07	A40-A2-CS-08	A40-A2-CS-08	A40-A2-CS-08	A40-A2-CS-09
Sam	Sampling Date	1/9/2004 10:25	1/9/2004 10:30	1/9/2004 10:34	1/9/2004 12:45	1/9/2004 12:50	1/9/2004 12:55	1/9/2004 13:00	1/9/2004 13:03	1/9/2004 13:03	3/5/2004 07:40	1/9/2004 13:07
Sam	Sample Depth				,			,				
Sam	Sample Type	N N	ź	Ϋ́Z	Z	Σ	Σ	ž	ž	FR1	ž	ž
Field	Field Sample	A40-A2-CS-001-D0	440-A2-CS-001-D0.0 A40-A2-CS-002-D0.0 A40-A2-CS-003-D0.0 A40-A2-CS-004-D0.0 A40-A2-CS-008-D0.0 A40-A2-CS-007-D0.0 A40-A2-CS-003-D0.0 A40-A2-CS	A40-A2-CS-003-D0.0	A40-A2-CS-004-D0.0	A40-A2-CS-005-D0.0	A40-A2-CS-006-D0.0	440-A2-CS-007-D0.0	A40-A2-CS-008-D0.0	A40-A2-CS-108-D0,0	A40-A2-CS-208-D0.0	A40-A2-CS-009-D0.0
Lab	ab Sample	E4A130167-018	E4A130167-018 E4A130167-019 E4A130167-020 E4A130167-021 E4A130167-022 E4A130167-023 E4A130167-024 E4A130167-025 E4A130167-025 E4A130167-020 E4A130167-020 E4A130167-020	E4A130167-020	E4A130167-021	E4A130167-022	E4A130167-023	E4A130167-024	E4A130167-025	E4A130167-027	E4C060186-010	E4A130167-026
PVC	PVC / Run	PR/1	PR/1	PR/1	PR / 1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1	PR/1
Status	sn	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte Meth	od Unit	Result JOA IRL. DF	Result QA IRL, DF	Result OA RL. DF		OA IRL, DFI Result OA IRL, DFI	Result QA (RL, DF)	Result QA [RL, DF]	Result OA (RL, DF)	Result QA (Rt., DF)	Result QA JRL, DF]	Result QA IRL, OF)
arsenic SW6	3010B mg/kg	1.6 [1.1,	arsenic SW6010B mg/kg 1.6 [1.1, 1] 1,2 [1.1, 1] 1.5 [1.1, 1] 1,2	1.5 [1.1, 1]		[1.1, 1] 1.3 [1.1, 1]	[1.1, 1] 1.4 [1.0, 1] 1.7	1.7 [1.0, 1]	1.2 [1.0, 1]	[11.0, 1] 1.2 [11.0, 1] 10.9 [11.0, 1] 2.2	2.2 [1.1, 1] 1.8	1.8 [1.1, 1]
cadmium SW6010B mg/kg	3010B mg/kg			-		-			-			_

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Base		NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
Site		AN	NA	NA	NA	AN	YA.	Ψ¥	NA VA	YA Y	NA
Point		A40-A3-CS-01	A40-A3-CS-02	A40-A3-CS-01 A40-A3-CS-02 A40-A3-CS-03	A40-A3-CS-04	A40-A3-CS-05 A40-A3-CS-06	A40-A3-CS-06	A40-A3-CS-07	A40-A3-CS-07 A40-A3-CS-08		A40-A3-CS-09
Sampling Date) Date	1/9/2004 13:10	1/9/2004 13:15	1/9/2004 13:15 1/9/2004 13:19 1/9/2004 13:21	1/9/2004 13:21	1/9/2004 13:25 1/9/2004 13:26	1/9/2004 13:26	1/9/2004 13:30	1/9/2004 13:30 1/9/2004 13:35		1/9/2004 13:40
Sample Depth	Depth	•									
Sample Type	Lype	Ä	ž	<u>z</u>	ž	Σ	Z	ž	FR1	Σ	N.
Field Sample	nple	A40-A3-CS-001-D0.	440-A3-CS-001-D0.0 A40-A3-CS-002-D0.0 A40	0 A40-A3-CS-003-D0.0	A40-A3-CS-004-D0.0	+A3-CS 003-D0.0 A40-A3-CS-004-D0.0 A40-A3-CS-005-D0.0 A40-A3-CS-006-D0.0 A40-A3-CS-007-D0.0 A40-A3-CS-107-D0.0 A40-A3-CS-107-D0.0 A40-A3-CS-008-D0.0 A40-A3-CS-008-D0.0	A40-A3-CS-006-D0.0	A40-A3-CS-007-D0.0	A40-A3-CS-107-D0.0	A40-A3-CS-008-D0.0	A40-A3-CS-009-D0.0
Lab Sample	ple	E4A130167-028	3 E4A130167-029	E4A130167-028 E4A130167-029 E4A130167-030 E4A130167-031 E4A130167-032 E4A130167-033 E4A130167-034 E4A130167-037 E4A130167-035 E4A130167-036	E4A130167-031	E4A130167-032	E4A130167-033	E4A130167-034	E4A130167-037	E4A130167-035	E4A130167-036
PVC / Run	=	PR/1	PR/1	PR/1	PR/1	PR/1	PR / 1	PR / 1	PR/1	PR/1	PR/1
Status		Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte Method	Unit	Result QA (RL, DF] Result QA RL, DF	Result QA [RL, DF]	Result QA [RL, DF]	Result QA [RL, DF]	Result QA [RL, DF]	Result QA IRL, DF]	Result QA (Rt., DF)	Result QA [RL, DF]	Result QA [RL. DF]
arsenic SW6010B mg/kg 1.6 [1.0, 1] 1.5 [1.0, 1] 1.4 [1.0, 1] 1.5 [1.0, 1] 1.5 [1.0, 1] 1.9 [1.1, 1] 2.2 [1.1, 1] 1.6 [1.0, 1] 2.0 [1.1, 1] 1.5 [1.0, 1] 1.0 [1.0, 1]	B mg/kg	1.6 [1.0, :	1] 1.5 [1.0, 1	1] 1.4 [1.0, 1]	[1.5]	1.9 [1.1, 1]	2.2 [1.1, 1]	[1.6 [1.0, 1]	2.0 [1.1, 1]	[1.0, 1]	1.0 [1.0, 1]
cadmium SW6010B mg/kg -	B mg/kg	-		1				-		_	

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Base		NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
Site		NA	NA	NA	NA	NA	NA	NA	¥N	Ą
Point		A40-A4-CS-01	A40-A4-CS-02	A40-A4-CS-03	A40-A4-CS-04	A40-A4-CS-05	A40-A4-CS-05	A40-A4-CS-06	A40-A4-CS-07	A40-A4-CS-08
Samplir	Sampling Date	1/9/2004 13:45	1/9/2004 13:50	1/9/2004 13:52	1/9/2004 13:54	1/9/2004 13:56	1/9/2004 13:56	1/9/2004 14:00	1/12/2004 09:10	1/12/2004 09:14
Sample Depth	Depth					1				
Sample Type	Type	ž	ź	N	Ę	Z	FR1	N.	Ä	Ξ
Field Sample	3mple	A40-A4-CS-001-D0.0	A40-A4-CS-001-D0.0 A40-A4-CS-002-D0.0	_	440-44-CS-003-D0.0 440-44-CS-004-D0.0 440-44-CS-005-D0.0 440-44-CS-105-D0.0 440-44-CS-006-D0.0 440-44-CS-007-D0.0 A40-44-CS-007-D0.0 A40-44-CS-008-D0.0	A40-A4-CS-005-D0.0	A40-A4-CS-105-D0.0	A40-A4-CS-006-D0.0	A40-A4-CS-007-D0.0	A40-A4-CS-008-D0.0
Lab Sample	mple	E4A130167-038	E4A130167-038 E4A130167-039	E4A130167-040	E4A130167-040	E4A130167-042	E4A130167-044	E4A130167-043	E4A130177-001	E4A130177-002
PVC / Run	Jun.	PR / 1	PR / 1	PR/1	PR/1	PR / 1	PR/1	PR/1	PR / 1	PR / 1
Status		Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte Method	Chit	Result QA IRL, DF	Analyte Method Unit Resut DA R. DF Resut QA R. DF	Result QA (RL, DF)	Result (QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF) Result QA RL, DF] Result Result	Result QA IRL, DFI	Result QA [RL, DF]	Result QA IRL, OFI	Result QA [RL, DF]	Result QA RL, DF1
arsenic SW601	SW6010B mg/kg 1.9	1.9 [1.0, 1] 1.5	1.5 [1.0, 1]	1.4 [1.1, 1] 1.7	1.7 [1.0, 1] 1.2	1.2 [1.0, 1] 1.4	1.4 [1.0, 1] 2.3	2.3 [11.1, 1]	[1.1, 1] 1.0 [1.0, 1] 1.6	1.6 [1.1, 1]
cadmium SW6010B mg/kg 1.2	0B mg/kg	1.2 [0.52, 1] 3.0	3.0 [0.52, 1]	ND [0.53, 1] 0.69	0.69 [0.52, 1] ND	ND [0.51, 1] 0.68	0.68 [0.51 1] 4.3		ND [0.51, 1] 1.3	1.3 [0.54, 1]

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	Base	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTN
	Site	NA	Ϋ́	NA	NA	ΨN	NA	NA	NA	NA	ΝΑ
	Point	A40-A4-CS-09	A40-A4-CS-10	A40-A4-CS-11	A40-A4-CS-12	A40-A4-CS-12	A40-A4-CS-13	A40-A4-CS-14	A40-A4-CS-15	A40-A4-CS-16	A40-A4-CS-17
	Sampling Date	1/12/2004 09:18	1/12/2004 09:21	1/12/2004 09:26	1/12/2004 09:29	1/12/2004 09:29	1/12/2004 09:33	1/12/2004 09:36	1/12/2004 09:41	1/12/2004 09:44	1/12/2004 09:45
	Sample Depth	,	•		•					,	
	Sample Type	ž	¥	Z	۶	FR1	Z	N N	Ň	Σ	Z
	Field Sample	A40-A4-CS-009-D0.0	A40-A4-CS-010-D0.	J A40-A4-CS-011-D0.0	A40-A4-CS-009-D0.0 A40-A4-CS-010-D0.0 A40-A4-CS-011-D0.0 A40-A4-CS-012-D0.0 A40-A4-CS-012-D0.0 A40-A4-CS-013-D0.0 A40-A4-CS-014-D0.0 A40-A4-CS-015-D0.0 A40-A4-CS-017-D0.0	A40-A4-CS-112-D0.0	A40-A4-CS-013-D0.0	A40-A4-CS-014-D0.0	A40-A4-CS-015-D0.0	A40-A4-CS-016-D0.0	A40-A4-CS-017-D0.0
	Lab Sample	E4A130177-003	E4A130177-003 E4A130177-004 E4A130177-005	E4A130177-005	E4A130177-006 E4A130177-017 E4A130177-007 E4A130177-008 E4A130177-009 E4A130177-010 E4A130177-011	E4A130177-017	E4A130177-007	E4A130177-008	E4A130177-009	E4A130177-010	E4A130177-011
	PVC / Run	PR/1	PR / 1	PR/1	PR/1	PR/1	PR / 1	PR/1	PR/1	PR / 1	PR/1
	Status	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated	Validated
Analyte	Analyte Method Unit Result OA RL, DFI Result OA RL, DFI Result OA RL, DFI	Result QA RL, DF	Result QA RL, DF		Result QA IRL, DF	Result QA [RL, DF]	Result QA (RL, DF)	Result QA [RL. DF]	Result QA IRL, DF1	Result QA [RL, DF]	Result QA [RL, DF]
arsenic	SW6010B mg/kg 1.9	1.9 [1.1, 1]	[1.1, 1] 2.2 [1.0, 1] 1.8		1.3 [1.6, 1] 1.2 [1.6, 1] 1.3 [1.6, 1] ND [1.6, 1] ND [1.6, 1] 3.0 [1.1, 1] 1.2 [1.6, 1]	1.2 [1.0, 1] 1.3	1.3 [1.0, 1] ND	I1.0,11	ND [1.0, 1]	3.0 [1.1, 1]	1.2 [1.0, 1]
cadmium	cadmium SW6010B mg/kg 3.9	-	0.53, 1] ND [0.52, 1] 4.9	[0.53, 1	0.53 [0.50, 1] ND	ND [0.51, 1] 2.4	2.4 [0.52, 1] ND	ND [0.51, 1] ND	ND [0.52, 1] 3.4	3.4 [0.54, 1] ND	ND [0.52, 1]

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Base		NORTN	7	NORTN	Z.	_	NORTN	_	NORTN	RTN	Ż	NORTN		NORTN	ž	
Site		ΑA		ž		_	₹		N.		Ż	4		Ϋ́		
Point		A40-A4	A40-A4-CS-18	A40-A	A40-A4-CS-19		140-A4	A40-A4-CS-19		A40-A4-CS-20		40-A4-	A40-A4-CS-20		A40-A4-CS-21	77
Sampling Date	ate	1/12/2C	1/12/2004 09:49	Ì	1/12/2004 09:51	_	1/12/20	/12/2004 09:51	<u> </u>	/12/2004 09:56	_	12/200	1/12/2004 10:06		1/12/2004 10:00	00:
Sample Depth	#					,			<u>.</u>		1					
Sample Type	e e	ž		Ξ		_	FR1		ž		z	_		ž		
Field Sample	e e	A40-A4	-CS-018-D(J.0 A40-A	4-CS-019	9-D0.0 ≠	140-A4-1	CS-119-D	0.0 A40-	40-A4-CS-018-D0.0 A40-A4-CS-019-D0.0 A40-A4-CS-119-D0.0 A40-A4-CS-020-D0.0 A40-A4-CS-022-D0.0 A40-A4-CS-021-D0.0	0.0 A	10-A4-C	S-022-D0	O A40-A	4-CS-02	1-D0.0
Lab Sample		E4A13	0177-012	E4A1;	30177-0	113 E	E4A130	3177-018	E4A	E4A130177-012 E4A130177-013 E4A130177-018 E4A130177-014 E4A130177-016 E4A130177-015	<u>й</u>	4A130	177-016	E4A1	30177-	015
PVC / Run		PR / 1		PR/1		<u></u>	PR / 1		PR / 1	-	α.	PR/1		PR / 1		
Status		Validated	eď	Validated	sted .		Validated	рe	Vali	/alidated	>	/alidated	ď	Validafed	paje	
											_	-	-			
Analyte Method L	Unit	Result	RL, OFI	Result	QA [RL,	1. FO	tesult C	A IRL, DF	Resul	1 QA (RL, DF	R	Sult	A (RL DF)	Result	QA [RL	H
arsenic SW6010B mg/kg 1.6 [1.0, 1] 1.7 [1.1, 1] 2.4 [1.1, 1] 1.5 [1.1, 1] ND [1.0, 1] 1.5 [1.1, 1]	mg/kg	1,6	[1.0, 1	1.7	1.1	1, 11	4	[1.1, 1	1,5	[1.1,	<u>z</u>		[1.0, 1]	ر ئ	드	1, 1
cadmium SW6010B mg/kg 1.9	mg/kg	1.9	[0.52	0.52, 11 6.8	_	0.54, 1] 9.5	- 2:	[0.55,	[0.55, 1] 1.7	[0.53, 1] ND	<u>z</u>	0	0.51	[0.51, 1] ND	ല	0.56, 1]

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	Base	ĺ	NORTN	Ę	<u> </u>	NORTN		N	NORTN		NORTN		NORTN	z		NORTN	7	_	NORTN		
	Site		ž		ž	4		ž			۲ 2		ž			¥		_	¥		
	Point		46	140-A1-CS-01	¥	40-A1-CS-02	3-02	¥	40-A1-CS-03	63	A40-A1-CS-04	,04 04	A4D-A	4D-A1-CS-05		A40-A1	A40-A1-CS-05	_	A40-A1-CS-08	8-08	
	Sampling Date	ate	1,972	19/2004 09:05	3,1	19/2004 09:10	39:10	13	/9/2004 09:15	£ 5	1/9/2004 09:18	9:18	1/9/20	1972004 09:21		1/9/200	/9/2004 09:21	_	1/9/2004 09:25	39:25	
	Sample Depth	Ð						-								,		_			
	Sample Type	- 80	Ξ		ž	_		ż			ž		Σ			FR		_	¥		
	Field Sample	_	A 60-7	A40-A1-CS-001-D0.0 A40-A1-CS-002-D0.0 A40-A1-CS-003-D0.0	D0.0	10-A1-C	S-002-D0.C	0 A4C	LA1-CS	003-000	A40-A1-CS-004-DD.0	1-004-D0,0	A40-A	40-A1-CS-005-D0.0		A40-A1	A40-A1-CS-105-D0.0 A40-A1-CS-006-D0.0	000	440-A1-C	S-006-D0	6
	Leb Sample	_	E4A1	E4A130167-001		E4A130167-002	37-002	<u>ê</u>	£4A130167-003	2-003	E4A130167-004	1.004	E4A13	E4A130167-005		E4A13	E4A130167-016		E4A130167-006	900-2	
	PVC / Run Status		PR / 1	PR / 1 /alidated	£ \$	PR / 1 Velidated		PR / 1	PR / 1 Validated		PR / 1 Validated		PR / 1 Validated	rteo		PR / 1 Validated	pe		PR f 1 Vetidated		
Analyte	Method Unit	Unit	Result	Result OA (R.C. DP)		ð	Result JOA [FRL DP]	Z.	Result OA Pt., OF	PIC DE	Resul	PR DE	A See City	OA JAR, DR		Result	Result OA PRL DF		Result	DA PR. DR	
alpha-chlordane	SW8081A mg/kg	OX/But	ş	(0.0018, 1	B, 11 ND	ŗ	0.0017, 1		F	0.0019, 11	ş	10.0088, 5) NO	ON 15	0,0]	0.0092, 5} ND G	50 QV	0.00	0.0093, 5]	5 AN	[0.0090, 5]	ত
gamma-chlordang	SW8081A mg/kg	mg/kg	웊	[D:00	0.0021, 1] NO	_	[0.0021, 1] NO	2	-	0.0022, 1	0.0022, 11 0.0085 J	[0.010, 5]	0.010		0.011, 5	D G	0.0	0.011, 53	NO G	10.011, 5	<u></u>
									_					_							
Aroclor 1016	SW8082	g/kg	ş	80	3.035, 1] NO	_	0.034, 1	모	_	0.036, 1]	무	0.034	모	2	0.036, 1]	2	0.038, 1	Ξ	9	0.035,	F
Aroclar 1221	SW8082	mg/kg	ş	10.03	3.085 1] ND		[0.034, 1]	Ž	_	0.036.11	9	[0.034, 1]	2	9	0.036, 1]	2	0.036, 1	=	2	0.035	Ξ
Aracior 1232	SW8082	mg/kg	ĝ	0.035,	3, 13 NC	_	0.034, 1	<u>Q</u>	_	10,036, 1)	Q	[0.034, 1	2	0.0	0.036, 1]	ę	[0.038,	=	ç	0,035	=
Aracler 1242	SW8082	mg/kg	2	0.035	1, 1, N	_	0.034, 1	<u>Q</u>	ے	10.036, 1)	QN.	0.034, 1	2	<u>0</u>	0.038, 1]	2	(0.036	=	2	0.035, 1]	7
Arodor 1248	SW8082	gy/kg	皇	0.035	5, 1) NG	0	[0.034, 1]	Ž	_	0.036, 1)	9	[0.034, 1	2	50.0	0.038, 1]	2	(0.036, 1	=	2	10.035, 1	÷
Aroclor 1254	SW8082	mg/kg No	2	0.035	1. E.	_	[0.034, 1]	Q.	-	0.036, 1)	0.13	0.034, 1	0,17	<u> </u>	0.036, 1]	6.14	(0.036,	=	0.047	0.035	Ξ
Aroclor 1260	SW808Z	mo/kg PND	Q	10,035	1	_	10.034, 1	ş	_	0,036, 11	9	D.034, 1	2	10.0	0.036, 11	2	10.036, 11		9	0.035	=

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	Base	NORTN	NORTN		NORTN	Ż	NORTN	NORTN	_	NORTN	N	NORTN	NORTA	ż	NORTN		NORTN		NORTN	_	NORTN	NORTN	z
	Site	NA NA	¥		AM	z	NA	×	_	4	Ā		ž		¥		ď,		NA	_	¥		
	Paint	A40-A1-CS-07	A40-A1-CS-08	80-8	A40-A1-CS-09		A40-A1-CS-09	A40-A1	A40-A1-CS-10 A	40-A1-C5-10	.≤.	40-A1-CS-11	A40-A	440-A1-CS-12	A40-A1-CS-13	13	A40-A1-CS-13	3	A40-A1-CS-14	_	40-A1-CS-14	•	A40-A1-CS-15
	Sampling Date	1/9/2004 09:30	1/9/2004 09:35	38,35	1/9/2004 09:40		3/5/2004 07:30	1/9/200	/9/2004 09:43 e	924/2004 11:30	-	19/2004 09:45	1/9/20	9/2004 09:50	1/9/2004 09:55	55	1/9/2004 09:55	55	1/9/2004 10:01	.,	3/5/2004 08:40	Ξ.	/9/2004 10:05
	Sample Depth	_	,			,			•				٠.		بنـ							-	
	Sample Type	Ξ	Ξ		ž	2	E	z	_	=	Z		Z.		E.		<u> </u>		£		Ξ.	Ž.	
	Fletd Sample	A40-A1-CS-007-D0.0 A40-A1-CS-008-D0.0	A40-A1-C.	S-008-D0.0	A40-A1-CS-009-D0.0		40-A1-CS-209-E	10.0 A40-A1	A40-A1-CS-209-D0.0 A40-A1-CS-010-D0.0 A40-A1-CS-210-D0.0 A40-A1-CS-011-D0.0	40-A1-CS-21.	0-D0.0 A40	A1-CS-011-D	_	A40-A1-CS-012-D0.0	0-A40-A1-CS-013-D0.0	0.00-610	A4D-A1-CS-113-D0.0	113-00.0	A40-A1-CS-014-DQ.0	000	40-A1-CS-214	-D0:0 A40-7	A40-A1-CS-214-D0.0 A40-A1-CS-015-D0.0
	Lab Sample	E4A130167-007	E4A13D167-008	17-008	E4A130167-009		E4C060186-004		E4A130167-010 E	E4F250279-001		E4A130167-011	E4A13	E4A130167-012	E4A130187-013	013	E4A130167-017	210	E4A130187-014	_	£4C060186-007		E4A130167-015
	PVC / Run	PR/1	PR/1		PR / 1	<u>a.</u>	PR/1	PR/1	_	PR/1	PR / 1	11	PR/1		PR /1		PR/1		PR / 1	<u></u>	PR/1	PR -	
	Status	Validated	Validated		Validatod	≥.	Validated	Validated	<u>-</u>	/alidated	Veth	Vetidated	Validated	lad	Validated		Validated		Validated		Validated	Validated	ted
Anslyte	Method	Mathod Unit Result los RLDF	Rosell	las Inc. on	Regult	os Ira. os	Result CA Plu, OF	E S	ON TRI, OF R	Result GA PRL, OF	Renth	a las per on		Result CA (RL, DF)	Result	OA PRI, DIS	Real	Q. R. OT	Result OA	ON IRI, DET	Result GA PRL, OF]		Result OA RL. OF]
hlordane	SW8081A ma/kg ND	ND (0,0017, 1	QN 1	f0.0018, 11 0.0051	0.0051 J	0.0086. 51		0.52	- (0.11, 60)	_	D ON	-	10.0089, 5] ND G	I	0.0091, 5] 0.0015 J	[10,0018, 1]	9 GN	[0.0091, 5] 0.038	0.036	(0.0088, 51	_	NO G	[0.0089, 5]
9		. 9	0020, 11 6,0052	10,0021, 11,0,028	0.028	10,010, 51		0.65	0.13 60		NDC	0.010,5	0 0 N	(0.011, 5)	2,011, 51, 0,0056	10.0021, 13 ND G	9 07	[0.011, 5]	0,040	0.010 51	_	9 QN	0.011.5
		_						_		_				· 							_		
Aroclor 1015	SWB0B2 mg/kg ND		ON ON	(0.035, 1)	Q.		ND [0.035,	5, 1) NO	(0.69, 20) N	9	0.033, 13 ND	10.03	ON THE	(0.035, 1)	Q	[0.035, 1]	9	[0.035, 1]	5	0.068, 2)	10.0	0.035, 13 NO	(0.035, 1)
Aroclar 1221		_	S S	[0.035, 1]	2		NO [0,035	D35, 11 ND	10.69.20] N	0	033, 11 ND	[0.034, 1]	ON [1.7	[0.035, 1]	QV	0.035, 11	9	10.035.1]	Q.	0.068 2]	0.0	0.035, 1) NO	[D 035, 1]
Aroclor 1232	SW8082 ma/kg	Q.	Q	[0.035, 1]	2	-	0.035	7, 13 ND	0.69, 20] N	9	3.033, 11 ND	[0.034, 1	1. 1. NO	[0.035, 1]	ND	[0.035, 1]	ş	[0.035, 1]	9	0.068, 2]	00	0.035, 11 ND	[0.035, 1]
Arodor 1242		ND 10.033, 11	ç	10.035, 11	9	10.10 31 N	0,035	J. H ND	10.69 201	9	0.053, 11 ND	10.034, 1	QN (1.)	[0.035, 1]	S	[0.035, 1]	9	(0.035, 1)	Ð	0.068, 2)	0.0	0.035, 1) NO	(0.035, 1)
Areclor 1248		9	ě	10,035, 11	02	0.10 3) N	10.035	Z Z	(0.69, 201 h	0	003 11 ND	10.034, 1	ON T	10.035, 1	Ş	[0.035, 1]	9	(0.035, 1)	9	0.068, 2]	9	0.035, 1] ND	[0.035, 1]
Aroclor 1254		٥	10.14	_	0.58	(0.10, 3) 10.	0.13 0.035	5, 1) 3.8	0.69.20] 0	1.45	0.033, 1) 0.08	10.034	1, 1) 0.18	(0.035, 1)	0.033 J	[0.035, 1]	0.030 J	(0.035, 1)	0.32	[0.068, 2]	9	0.035, 1] 0.12	[0.035, 1]
Arnelar 1260		ND 10.033, 11	Ð	0.035, 11	2		NO [0.035	S 11 NO	(0.69, 20) ND	Σ	10.033, 1] NO	0.034	1, 11 ND	(0.035, 1)	QN	[0.035, 1]	ç	[10.035, 1]	ND	0.068, 2]	0.01	0.035, 11 ND	[0.035, 1]

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	Base	NORTH	ĺ	NORTN	Ī	NORTN		NORTN		ľ	NORTN		NORTN		NERGN	
	Site	¥.		NA NA		¥	_	¥			¥		¥.		¥Z.	
	Point	A40-A1-CS-01	CS-01	A40-A1-CS-02	_	440-A1-CS-03	5-03	A40-A1-CS-04	Ā	_	A40-A1-CS-05	ş	A40-A1-CS-05	CS-05	A40-A1-CS-06	90-8
	Sampling Date	1/9/2004 09:05	90:60	1/9/2004 09:10	2	1/9/2004 09:15	9:15	179/2004 09:18	8	_	1/9/2004 09:21	121	1/9/2004 09:21	09:21	1/9/2004 09:25	6.25
	Sample Depth			,									,			
	Sample Type	Ξ		¥	_	Σ		ž		~	5		132		ž	
	Fleld Sample	A 40-A	35-001-D0.0	A40-A1-CS-001-D0.0 A40-A1-CS-002-D0.0		440-A1-CS	0.003-000-1	A40-A1-CS-003-D0.0 A40-A1-CS-004-D0.0	04-D0		A40-A1-CS-005-D0.0	0.00-500-	A40-A1-L	A40-A1-CS-105-D0.0 A40-A1-CS-006-D0.0	A40-A1-C	S-006-D0.D
	Lab Sample	E4A130167-001		E4A130167-002		E4A130167-003	7-003	E4A130187-004	5		E4A130167-005	500-	E4A130187-016	87-016	E4A13016	2.006
	PVC / Run	1,84		PR/1		PR / 1		PR/1			PR / 1		PR /	,	1871	
	Status	Velidated		Velideted	_	Vafidated		Validated		_	Validated		Validated	70	Validated	
Analyte	Method	and and		ac let to		20 101 401 81048			- i		-	100	100	1	-	-
			1				1		É	1		120	1	Jiel or		45
	Gase	NOK.		NORTN		NORTN		NORTH			NORTH		NORTN		NORTN	
	Sile	¥		ď.		¥		¥		_	¥		Ą		¥	
	Point	A40-A3-CS-01	CS-01	A40 A3 CS 02		A40-A3-CS-03	5-03	A40-A3-CS-04	¥	_	A40-A3-CS-05	8	A40-A3-CS-08	CS-CB	A40-A3-CS-07	2-07
	Sampling Date	1/9/2004 13:10	13:10	1/9/2004 13:15	9	1/8/2004 13:19	3:19	1/9/2004 13:21	<u>.</u>	•	1/9/2004 13:25	1.25	1/9/2004 13:26	13:26	1/9/2004 13:30	330
	Sample Depth				•					,						
	Sample Type	£		Σ	_	Ξ		ž		_	5		ž		Σ	
	Field Sample	A40-A3-C	0.001-D0.0	A40-A3-CS-001-DB,0 A40-A3-CS-002-D0,0		440-A3-CS	0.00	A40-A3-CS-004-D0.0	04-00		A40-A3-CS-006-DD,0	0.00-500-	A40-A3-0	A40-A3-CS-008-D0.0 A40-A3-CS-007-D0.0	A40-A3-C	S-007-DG.0
	Lab Sample	E4A130167-028		E4A130167-029		E4A130167-030		E4A130167-031	131		E4A130167-032	-032	E4A130167-033	167-033	E4A130167-034	7-034
	PVC / Run	PR / 1		PR/1	_	PR/1		PR/1		<u></u>	PR / 1		PR / 1		PR/1	
	Status	Validated	_	Validated	÷	Validated		Velidated			Validated		Validaled	•	Validated	
Analyte	Method Unit	Result OA (RL DF)	RL, DF	Result OA RL	- FG - FG	Result OA (RL, OF)	RL, OF	Result	QA RI, DE	-	Result	los Inc. on	Result	Result for [RL, OF]	Result	QA (RL. 04)
Aroclor 1016	SW8082 mg/kg	ON D	(0.035, 1)	Q,	ŧ	Đ.	0 034. 11	9	8	=	9	(0.035.11	9	11.035.11		10.035 13
Araclar 1221	SW8082 marka	QN		9	_		10 034	Ş	g	D 034 11		10 035	9	10.035		10036
Arnelor 1232		2				-	17 70 0	9 9	5	11 1000		100	2 9	1 20 5	2 :	1 4 6 6
Arnelor 1242		2 2		2 9		_	1 1 1 1 1	9 9	2 6		- ·	i con d	2 !	0000	2	000
יייייייייייייייייייייייייייייייייייייי		2		ž	_	_	L 034	2	3	_	•	600	<u>a</u>	0,035, 1	2	(0.035, 1
Arociar 1246		ON GAIGE	10.035, 1	_		_	0 034 1	9	ě		9	[0.035, 1]		[0.035, 1]	2	[0.036, 1]
Aroclor 1254		D 071	0,035, 1, No		0.035, 11	_	0.034	D.	0.0	[0.034, 1]	0.048	[0.035, 1]	0.070	[0.035, 1]	0,11	[0.035, 1]
Araclar 1260	SVV8082 mg/k	mgrkg ND	0.035, 1]		0.035, 11	2	0.034, 1]	2	0.0		9	10.035, 11	문	10.035, 11	ç	10.035.11

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						The state of the s								
	Basa	Base NORTN NORTN	NORTN	NORTN	NORTN	NORTN	NORTN	NORTA	NORTN	INORTH	NORTH	NORTN	NORTN	NORTN
	Site	NA	¥	ĄV	¥	Ϋ́ Α	¥	₹Z	Y.	NA.	¥2	¥		NA
	Point	A40-A1-CS-07	A40-A1-CS-08	A40-A1-CS-09		A40-A1-CS-10	A40-A1-CS-10	A40-A1-CS-11	A40-A1-CS-12	A4D-A1-CS-13	A40-A1-C5-13	A40-A1-CS-14	A40-A1-CS-14	A40-A1-CS-15
	Sampling Date	1/9/2004 09:30	1/9/2004 09:35	1/9/2004 09:40	3/5/2004 07:30	1/9/2004 09:43	6/24/2004 11:30	1/9/2004 09:45	1/9/2004 09:50	1/9/2004 09:55	179/2004 09:55	1/9/2004 10:01	3/5/2004 08:40	1/9/2004 10:05
	Sample Depth													
	Sample Type	×	Σ	Z	\$	Ξ	E	Σ	ž	N.	FR	₹	Σ	N.
	Fleid Sample		A40-41-CS-D08-D0	1.0 A40-A1-CS-009-D0.0		A40-A1-CS-010-D0.0	1 A40-A1-CS-210-D0.0	A40-A1-05-209-D0.6 A40-A1-05-010-D0.0 A40-A1-05-011-D0.0 A40-A1-05-012-D0.0 A40-A1-05-012-D0.0 A40-A1-05-012-D0.0	A4D-A1-CS-012-D0.0	A4D-A1-CS-013-D0.D		A40-A1-CS-014-D0.0	A40-A1-CS-214-D0.0	A40-A1-CS-015-D0.0
	Lab Sample		E4A130167-008			E4A130167-010	E4F250279-001	E4A130167-011	E4A130167-012	E4A130187-013	E4A130167-017	E4A130167-014 FE4C060188-007 E4A130167-015	E4C060186-007	E4A130167-015
	PVC / Run		PR / 1		PR/1	PR/1	PR/1	PR / 1	PR/1	PR/1		PR/1	PR / 1	PR/1
	Status		Validated	Validated	Validated	Validated	Validated	Validated	ъ	Validalad	Validated	Validated	Validated	Validated
Amalone	Mathod	Mathod If it is a second to the loss of th	100	64 19 10 64 19 10 64 19 10		100	<u> </u>	10	3	100	and the second control of the second control		3	101
	3	The facility of the last	Land Co.	ענות יייי ונייר ריי		Nester Living	Masult On Ilun uni	KENDE CO INC. CT.	The same of	Kasoli Carline Ull	TABLE OF LINE UT	10 1×1 01	25 121 75 252	ROLL CALLERY

Point Sampling Date Sample Depth		A40-A3-CS-07	-CS-07	AARAGES OF	000					
Samplir Sample					Š		A40-23-CS-09	Ş		
Sample	Sampling Date	1/9/200	1/9/2004 13:30	1/9/2004 13:35	33		1/9/2004 13:40	9		
	Depth			٠.			,			
Sample Type	Type	FR1		ž			Σ			
Field Sample	aldura	A40-A3-	A40-A3-CS-107-D0.0 A40-A3-CS-008-D0.0	A40-A3-C	8	8-00.0	A40-A3-CS-009-D0.0	ģ	000	
Lab Sample	elan	E4A130	E4A130167-037	E4A130167-035	Ö	ñ	E44130167-036	-038		
PVC / Run		PR/1		PR / 1			PR./1			
Status		Validated	žď	Validated			Velideted			
Analyte Method	뱜	Result O	Result GA [RL, DF]	Resid	ă	ри јег, он	Remulk	á	ON INC. OF	
Araclar 1016 SW8082	12 mg/kg	2	[0.035, 1]	P	=	0.034, 1]	Q	_	0.034, 1]	
Aracler 1221 SW8082	2 mg/kg	2	[0.035, 1]	2	_	0.034, 1]	9	_	[0.034, 1]	
Aroclor 1232 SWB0B2	12 mg/kg	9	[0.035, 1]	ş	_	0.034, 1]	Q	_	0.034, 1)	
Arociar 1242 Sty8082	i2 mg/kg	ě	[0.035, 1]	ş	_	0.034, 1]	2	_	0.034, 1]	
Aroclar 1248 SWB082	2 mg/kg	9	[0.035, 1]	2	=	0.034, 1]	Q.	_	[0.034, 1]	
Aroclar 1254 SWB082	2 mg/kg	750.0	[0.035, 1]	ç	_	0.034, 1]	ð	_	0.034, 1]	
Aroclar 1250 SWB082	2 mg/kg ND	9	[0.035, 1]	2	-	0.034, 11	Q		0.034, 1)	

NORTN

NORTN

Bass

APPENDIX C HUMAN HEALTH RISK TABLES

TABLE 1 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN NORTON AFB, AOC40

Scenario Timeframo: Future Medium: Soil Exposure Medium: Soil Exposure Point: Soil at AOC40

Location Detection Range of Concentration Concentration and Processing Concentration Screening Toxicity Value (3) Potential ARARY Potential ARARY ARAR		7777															
Concentration Qualifier Concentration Co	CAS	Свещіся	Minimum (1)	Minimum	Maximum (1)	Maximum		Location	Defection	Rance of	Concentration	Backnown	Screening Toxicity	Potential	Potential	Ç G	Dationala for
METALS Concentration Concentration Limits Screening Screening Human-health based TCG TBC TBC TBC METALS 1.00 3.1 mg/kg A40-A1-CS-04 4.2 i 53 0.4 · 0.45 3.15+00 N/A 3.9E-01 C N/A N/A PCBs 0.024 J 0.024 J mg/kg A40-A3-CS-02 i / 18 0.02 · 0.035 2.4E-02 N/A 3.9E-01 C N/A N/A PCBs 0.047 J mg/kg A40-A3-CS-02 i / 18 0.02 · 0.035 2.4E-02 N/A 2.2E-01 C N/A	Number		Concentration	Qualitier	Concentration			of Maximum	Frequency	Detection	Used for	Value (2)	Residential	ARAR/	ARAR/	Flag	Contaminant
METALS Lind 3:1 mg/kg A40-A4-CS-04 4.2 5:3 0.4 - 0.45 3:15+00 N/A 3:9E-01 C N/A Source PCB* 0.024 J 0.024 J mg/kg A40-A3-CS-02 i								Concentration		Cimits	Screening		Human-health	TBC	TBC		Deletion or
METALS 1.00 3.1 mg/kg A40-A1-CS-04 4.2 5.8 0.4 - 0.45 3.15+00 N/A 3.9E-01 C N/A N/A PCBs 0.024 J 0.024 J mg/kg A40-A3-CS-02 i </th <th></th> <th>based TCG</th> <th></th> <th>Source</th> <th></th> <th>Selection (4)</th>													based TCG		Source		Selection (4)
1.00 3.1 mg/kg A40-A4-C3-19 15 / 30 0.06 - 0.067 8.2E+00 N/A 3.9E+01 C N/A N/A N/A PCBs		METALS					_										
0.53 8.15 mg/kg A40-A4-CS-19 15 / 30 0.06 - 0.067 8.2E+00 N/A 9.0E+00 N N/A N/A N/A PCBs 0.024 J 0.024 J mg/kg A40-A3-CS-10 8 / 18 0.02 - 0.035 4.5E-01 N/A 2.2E-01 C N/A	7440-38-2	Arsenic	1.00		3.1		mg/kg	A40-A1-CS-04	,	0.4 - 0.45	3.15+00	A/A	3.9E-01	N/A	N/A	YES	ASL
PCBs 0.024 J 0.024 J mg/kg A40-A3-CS-02 i / 18 0.02 - 0.035 24E-02 N/A 2.2E-01 C N/A N/A 0.047 0.045 mg/kg A40-A1-CS-10 8 / 18 0.02 - 0.035 4.5E-01 N/A 2.2E-01 C N/A N/A	7440-50-B	Cadmium	0.53		8.15		mg/kg	A40-A4-CS-19	,	2000 - 0.067	8.2E+00	N/A	9.0E+00 N	N/A	N/A	YES	×
0.024 J 0.024 J mg/kg A40-A3-C3-02 i / 18 0.02 - 0.035 2-E-01 C N/A N/A 2-2E-01 C N/A N/A 0.047 0.047 0.047		PCB.															
0.047 0.045 mol/s A40-A1-G2-10 8 / 18 0.02 - 0.035 4-5E-01 N/A 2-2E-01 C N/A N/A	11096-82-5	Arochlor-1260	0.024	7	0.024	7	mgvkg			0.02 - 0.035	2.4E-02	A/N	2.2E-01 C	Α/N	N/A	YES	×
	11097-69-1	Arochlor-1254	0.047		0.45		mg/kg	A40-A1-CS-10		0.02 - 0.035	4.5E-01	N/A	2.2E-01 C	A/N	N/A	YES	ASL

Minimum/maximum detected concentration.
 Background values derived from 65% upper confidence limit of mean.
 Screening levels derived from Terliminary Remediation Goals (PRGs) developed by the USEPA (2000).
 Selection Reason: Above Screening Level (ASL): Toxicity Information Available (TX) and above the human-health based screening level/100.

Definitions ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered J = Estimated Value

COPC = Chemical of Potential Concern SQL = Sample Quantitation Limit N/A = Not Applicable C = Carcinogenic N = Non-Carcinogenic

TABLE 2 MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY FUTURE LAND USE NORTON AFB, AOC40

Scenario Timeframe: Future Medium: Soil Exposure Medium: Soil Exposure Point: Soil at AOC40

Chemical	Units	Arithmetic	95% UCL	Maximum	Махітит	EPC	Reč	Reasonable Maximum Exposure	um Exposure
jo		Mean		Detected	Qualifier	Units			
Potential				Concentration			Medium	Medium	Medium
Concern							EPC	EPC	EPC
							Value	Statistic	Rationale
METALS									
Arsenic	mg/kg	1.3E+00	1.9E+00	3.1E+00		mg/kg	1.9E+00	UCL-T	UCL-T > UCL-N
Cadmium	mg/kg	1.4E+00	1.4E+01	8.2E+00		mg/kg	8.2E+00	Max	Max < UCL-T
PCBs									
Arochlor-1260	mg/kg	1.2E-02	i.4E-02	2.4E-02	7	mg/kg	1.4E-02	N-TON	UCL-N > UCL-T
Arochlor-1254	mg/kg	6.0E-02	1.3E-01	4.5E-01		mg/kg	1,3E-01	UCL-T	UCL-T > UCL-N

J = Reported value is <Contract Required Detection Limit, but >Instrument Detection Limit.

Future	Soil	Soil	Soit at AOC40	Industrial worker	Adult
Scenario Timeframe:	Medium;	Exposure Medium:	Exposure Point:	Receptor Population:	Receptor Age:

TABLE 3
CALCULATION OF NON-CANCEH HAZARDS
REASONABLE MAXIMUM EXPOSURE
NOHTON AIR FORCE BASE
NOHTON AFB, 1RP AOC40

	N/A			N/A 3.2E-04	N/A 3.0E-03	1.4E-02		N/A 8.6E-04	N/A 7.2E-05		N/A 4.2E-04	N/A 3.9E-03	5.2E-03		N/A 2.2E-05	N/A 1.4E-04		N/A 3.8E-09	N/A 3.6E-08	1.6E-04	hways 2.0E-02
Hereferice Hererence Hererence Dose Units Concentration Concentration Units					- :																Total Hazard Index Across All Exposure Routes/Pathways
Reference	AVA			N/A	N/A			N/A	N/A	•••	N/A	N/A			N/A	N/A		N/A	N/A		All Exposu
Reference Dose Units	nep oyou	mg/kg-day		mg/kg-day	mg/kg-day			mg/kg-day	mg/kg-day		mg/kg-day	mg/kg-day			mg/kg-day	mg/kg-day		mg/kg-day	mg/kg-day		Index Across
Reference Dose (2)	20.50	5.0E-04		2.0E-05	2.0E-05			3.0E-04	5.0E-04		2.05-05	2.05-05			8.65-06	5.7E-06		3.4E-04	3.4E-04		Total Hazard
Intake (Non-Cancer) Units	noprayou.	mg/kg-day		mg/kg-day	mg/kg-day			mg/kg-day	mg/kg-day		mg/kg-day	mg/kg-day			mg/kg-day	mg/kg-day		mg/kg-day	mg/kg-day		
Intake (Non-Cancer)	95.07	3.9E-06		6.5E-09	6.0E-08			2.6E-07	3.6E-08		8.4E-09	7.8E-08			1.9E-10	7.8E-10		1.3E-12	1,2E-11		
EPC Selected for Hazard	2	Σ	•	Σ	≥			Σ	Σ		Σ	Σ			Σ	Σ		Σ	Σ		
Route EPC Units	modeo	mg/kg		mg/kg	mg/kg			mg/kg	mg/kg		mg/kg	mg/kg			mg/m	mg/m		"ш/вш	m/bm		
Route EPC Value	95.00	8.2E+00		1.4E-02	1,35-01			1.9E+00	8.2E+00		1.4E-02	1.3E-01			1.5E-09	6.2E-09		1.0E-11	9.5E-11		
Medium EPC Units	wyou	mg/kg		mg/kg	mg∕kg			mg/kg	mg/kg		mg/kg	mg/kg			mg/kg	mg/kg		mg/kg	mg/kg		
Medium EPC Value	1 95+00	8.2E+00		1.4E-02	1.3E-01			1.9E+00	8.2E+00		1.4E-02	1.3E-01			1.9E+00	8.2E+00		1,4E-02	1.3E-01		
						(Total)							(Total)							(Total)	
Chemical of Potential Concern	METALS		PCBs				METALS			PCBs				METALS			PCBs				
	Arsenic	Cadmium		Arochlor-1260	Arochlor-1254			Arsenic	Cadmium		Arochlor-1260	Arochlor-1254			Arsenic	Cadmium		Arochlor-1260	Arochlor-1254		
Exposure Route	Ingestion						Dermai							Inhalation							

mg/kg-day = milligrams per kilogram per day mg/m² = milligrams per cubic meter

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chronic
EPC = Exposure Point Concentration

mg/kg - militigrams per kilogram

mg/kg = militigrams per kilogram

N/A = Not Available

CALCULATION OF CANCER RISKS REASONABLE MAXIMUM EXPOSURE TABLE 4

Scenario Timeframe: Future

Medium: Soil

Medium: Soil				CALCULAT	CALCULATION OF CANCER RISKS	ER RISKS					
Exposure Point: Soil at	Exposure Medium: Soil at AOC40			HEASONABI NOR	REASONABLE MAXIMUM EXPOSURE NORTON AFB, AOC40	EXPOSURE C40					
Receptor Population: Receptor Age: Adult	Receptor Population: Industrial Receptor Age: Adult	·									
	2,114							-			
Exposure	Chemical	Medium	Medium	Route	Route	EPC Sefected	Intake	Intake	Cancer Stone	Capper Slope	Cancer
Route	of Potential	EPC	EPC	EPC C	EP.	ior Risk	(Cancer)	(Cancer)	Factor	Factor Units	Risk
	Concern	Value	Units	Value	Units	£		Units			
Ingestion	METALS										
	Arsenic	1.9E+00	mg/kg	1.9E+00	mg/kg	Σ	3.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) -1	5.0E-07
	Cadmium	8.2E+00	mg/kg	8.2E+00	mg/kg	æ	1.4E-06	mg/kg-day	N/A	(mg/kg-day) -1	N/A
	PCBs					•					
	Arochtor-1260	1.4E-02	тд/кд	1,4E-02	mg/kg	Σ	2.3E-09	mg/kg-day	2.0E+00	(mg/kg-day) 1	4.6E-09
	Arochior-1254	1.3E-01	шg/kg	1.3E-01	mg/kg	Σ	2.1E-08	mg/kg-day	2.0E+00	(mg/kg-day) -1	4.3E-08
	(Total)										5.4E-07
Dermai	METALS										
	Arsenic	1.9E+00	mg/kg	1.9E+00	mg/kg	2	2.75-07	mg/kg-day	1.5E+00	(mg/kg-day) -1	4.0E-07
	Cadmium	8.2E+00	mg/kg	8.2E+00	mg/kg	¥	3.8€-08	mg/kg-day	N/A	(mg/kg-day) -1	N/A
	PCBs										
	Arochlor-1260	1.4E-02	тg/kg	1.4E-02	mg/kg	2	3.0€-09	mg/kg-day	2.0E+00	(mg/kg-day) -1	6.0E-09
	Arochlor-1254	1.3E-01	mg/kg	1.3E-01	mg/kg	25	2.8E-08	mg/kg-day	2.0E+00	(mg/kg-day) -1	5.6E-08
	(Total)										4.7E-07
Inhalation	METALS										
	Arsenic	1.9E+00	mg/kg	1.5E-09	тд/т,	Z	6.7E-11	mg/kg-day	1.5E+01	(mg/kg-day) -1	1.0E-09
	Свастит	8.2E+00	mg/kg	6,2E-09	mg/m	×	2.8E-10	mg/kg-day	1.5E+01	(mg/kg-day) -1	4.2E-09
	PCBs					••					
	Arochior-1260	1.4E-02	mg/kg	1,0E-11	_m⁄sm	×	4.6E-13	mg/kg-day	2.0E+00	(mg/kg-day) -1	9.3E-13
	Arochior-1254	1.36-01	mg/kg	9.5E-11	_mg∕m	Σ	4.3E-12	mg/kg-day	2.0E+00	(mg/kg-day) -1	8.6E-12
	(Total)	******									5.2E-09
							Ţ	stal Risk Across	All Exposure F	Total Risk Across All Exposure Routes/Pathways	1.0E-06
/1) Sporify	(A) Description Country and Co	The section of the section of									

(1) Specify Madium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

EPC = Exposure Point Concentration

mg/kg = milligrams per kilogram

mg/kg-day = milligrams per kilogram per day mg/m" = milligrams per cubic meter N/A = Not Avallable

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS COMMERCIAL/INDUSTRIAL REUSE SCENARIO REASONABLE MAXIMUM EXPOSURE NORTON AFB, AOC40

Scenario Timeirame: Future Receptor Population: Industrial worker Receptor Age: Adult

					Ī				2000000				
Medium	Exposure	Exposure Point	Chemical		Carcinog	Carcinogenic Risk		Chemical	Non-Ca	Non-Carcinogenic Hazard Quotlent	zard Quotlent		
				Ingestion	inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Boutes Total
Soil	Sail	Soil at AOC40	METALS					METALS	- TANANA I				
			Arsenic	5.0E-07	1.0E-09	4.0E-07	9.0E-07	Arsenic	skin, hyperpigmentation and keratosis	3.1E-03	2.2E-05	8.6E-04	4.0E-03
•			Cadmium	N/A	4.2E-09	N/A	4.2E-09	Cadmium	proteinuria (kidney)	7.86-03	1.4E-04	7.2E-05	8.0E-03
			PCBs				_	PCBs					
			Arochlor-1260	4.6E-09	9.3E-13	6.0E-09	1.1E-08	Arochlor-1260	eye, immune system	3.2E-04	3.8E-09	4.2E-04	7.4E-04
,			Arochlor-1254	4.3E-08	8.6E-12	5.6E-08	9.8E-08	Arochlor-1254	eye, immune system	3.0E-03	3.5E-08	3.9E-03	6.9E-03
					Total Hisk	Total Hisk Across Soll	1.0E-08		Total Hazard Index Across All Media and All Exposure Routes	Across All Mer	dia and All Exp	osure Routes	2.0E-02
			Total F	Total Risk Across All Media	Aedia and All Exposure Routes	sure Routes	1.0E-08						

Total Eyes, Immune System HI = 6.0E-03

Total Skin Hi =

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soll
Exposure Point:	Soil at AOC40
Receptor Population:	Resident
Receptor Age:	Child and Adult

Value Units Value Units In Hazard LiBE+00 mg/kg M 4.8E E.2E+00 mg/kg M 2.0E LiBE+00 mg/kg M 3.4E LiBE+00 mg/kg M 3.4E LiBE+00 mg/kg M 3.1E LiBE+00 mg/kg M 3.1E LiBE+00 mg/kg M 3.1E LiBE+00 mg/kg M 1.0E LiBE+01 LiB	Units 1.3E-06 mg/kg-day 5.4E-06 mg/kg-day 9.0E-09 mg/kg-day 8.4E-08 mg/kg-day	mg/kg-day mg/kg-day mg/kg-day mg/kg-day	Units N/A N/A N/A N/A N/A N/A N/A N/A N/A	(Child) (Adutt) 1.6E-01 4.3E-03 4.0E-01 1.1E-02 1.7E-02 4.5E-04
1.9E+00 mg/kg 1.9E+00 mg/kg M 8.2E+00 mg/kg 8.2E+00 mg/kg M 1.3E-01 mg/kg 1.9E+00 mg/kg M 8.2E+00 mg/kg 1.9E+00 mg/kg M 1.4E-02 mg/kg 1.9E+00 mg/kg M 1.4E-02 mg/kg 1.9E-01 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M	1.3E-06 mg/kg-day 5.4E-06 mg/kg-day 9.0E-09 mg/kg-day 8.4E-08 mg/kg-day 3.6E-07 mg/kg-day			
8.2E+00 mg/kg 8.2E+00 mg/kg M 1.4E-02 mg/kg 1.4E-02 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M 8.2E+00 mg/kg 1.9E+00 mg/kg M 1.4E-02 mg/kg 1.3E-01 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M	S.4E.06 mg/kg-day 9.0E.09 mg/kg-day 8.4E-08 mg/kg-day 3.6E-07 mg/kg-day			
1.4E-02 mg/kg 1.4E-02 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M 8.2E+00 mg/kg 1.9E+00 mg/kg M 1.4E-02 mg/kg 1.4E-02 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M	9.0E-09 mg/kg-day 8.4E-08 mg/kg-day 3.6E-07 mg/kg-day		· · · · · ·	
1.3E-01 mg/kg 1.3E-01 mg/kg M 1.9E+00 mg/kg 1.9E+00 mg/kg M 8.2E+00 mg/kg 1.4E-02 mg/kg M 1.4E-02 mg/kg 1.3E-01 mg/kg M	8.4E-08 mg/kg-day 3.6E-07 mg/kg-day			
1.9E+00 mg/kg 1.9E+00 mg/kg M 8.2E+00 mg/kg 8.2E+00 mg/kg M 1.4E-02 mg/kg 1.3E-01 mg/kg M	3.6E-07 mg/kg-day		_	\dashv
1.9E+00 mg/kg 1.9E+00 mg/kg M 8.2E+00 mg/kg 8.2E+00 mg/kg M 1.4E-02 mg/kg 1.3E-01 mg/kg M	3.6E-07 mg/kg-day			7.4E-01 2.0E-02
8.2E+00 mg/kg 8.2E+00 mg/kg M 1.4E-02 mg/kg 1.3E-01 mg/kg M		04 mg/kg-day	N/A N/A	1.05-02 1.25-03
1.4E-02 mg/kg 1.4E-02 mg/kg M 1.3E-01 mg/kg 1.3E-01 mg/kg M	4.4E-07 5.1E-08 mg/kg-day 5.0E-04	04 mg/kg-day	N/A N/A	8.8E-04 1.0E-04
1.3E-01 mg/kg 1.3E-01 mg/kg M	1.0E-07 1.2E-08 ma/kg-day 2.0E-05	05 mo/kg-day	A/N	5.1E-03 5.9E-04
	1.1E-07 mg/kg-day			_
		\dashv		6.4E-02 7.3E-03
mg/kg 1.5E-09 mg/m² M	2.6E-10 mg/kg-day			
mg/m² M	3.3E-09 1.1E-09 mg/kg-day 5.7E-06	06 mg/kg-day	N/A N/A	5.8E-04 1.9E-04
0.0E+00	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
mg/kg 1.0E-11 mg/m² M	1.8E-12 mg/kg-day			
1.3E-01 mg/kg 9.5E-11 mg/m* M	5.1E-11 1.7E-11 mg/kg-day 3.4E-04	04 mg/kg-day	N/A N/A	+
(Total)				6.8E-04 2.2E-04

Total Hazard Index Across All Exposure Routes/Pathways

Total Hazard Index Across All Exposure Routes/Pathways (Child + Adult) 8.3E-01

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chronic

EPC = Exposure Point Concentration

mg/Kg-amiligram sper klogram

mg/M = miligrams

mg/kg-day = milligrams per kllogram per day $mg/m^2 = milligrams$ per cubic meter

N/A = Not Available

CALCULATION OF CANCER RISKS HEASONABLE MAXIMUM EXPOSURE NORTON AFB, AOC40 TABLE 7

Medium: Soil
Exposure Medium: Soil
Exposure Point: Soil at AOC40
Receptor Population: Resident
Receptor Age: Child and Adult

Scenario Timeframe: Future

Exposure Route	Chemical of Potential OCONCern	Medlum EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk (1)	Child Intake (Cancer)	Adult Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Stope Factor Units	Cancer Flisk (Child)	Cancer Risk (Adult)
Ingestion	METALS Avsenic Cadmium PCBs Arochlor-1260 Arochlor-1254 (Total)	1.9E+00 8.2E+00 1.4E-02 1.3E-01	mg/kg mg/kg mg/kg mg/kg	2.6E+00 8.2E+00 1.4E-02 1.3E-01	mg/kg mg/kg mg/kg mg/kg	EE 22	5.5E-06 1.7E-05 2.9E-08 2.7E-07	6.0E-07 1.9E-06 3.1E-09 2.9E-08	mg/kg-day mg/kg-day mg/kg-day mg/kg-day	1.5E+00 N/A 2.0E+00 2.0E+00	(mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1	8.3E.06 N/A S.7E.08 5.3E.07 8.9E-06	8.9E-07 N/A 6.2E-09 5.8E-08
Dermal	Arsenic Cadmium PCBs Arochlor-1260 Arochlor-1254 (Total)	1.9E+00 8.2E+00 1.4E-02 1.3E-01	mg/kg mg/kg mg/kg mg/kg	1.9E+00 8.2E+00 1.4E-02 1.3E-01	mg/kg mg/kg mg/kg	× × ×	2.7E-07 3.8E-08 8.7E-09 8.1E-08	1.2E-07 1.7E-08 4.0E-09 3.7E-08	mg/kg-day mg/kg-day mg/kg-day mg/kg-day	1.5E+00 N/A 2.0E+00 2.0E+00	(mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1	4,0E-07 N/A 1,7E-08 1,6E-07 5,8E-07	1.9E-07 N/A 8.1E-09 7.5E-08
Inhalation	Arsenic Cadmium PCBs Arochior-1260 Arochior-1254 (Total)	1.9E+00 8.2E+00 1.4E-02 1.3E-01	mg/kg mg/kg mg/kg mg/kg	1,5E-09 6,2E-09 1,0E-11 9,5E-11	mg/m" mg/m" mg/m"	22 22	6.8E-11 2.9E-10 4.7E-13	9.0E-11 3.8E-10 6.2E-13 5.8E-12	mg/kg-day mg/kg-day mg/kg-day mg/kg-day	1.5E+01 1.5E+01 2.0E+00 2.0E+00	(mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1 (mg/kg-day) -1	1.0E-09 4.3E-09 9.5E-13 8.8E-12 5.3E-09	1.3E-09 5.6E-09 1.2E-12 7.0E-09
	to formation and the second se	Language and the state of the s			1			T	tal Risk Across	: All Exposure	Total Risk Across All Exposure Routes/Pathways		1,2E-06

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation. EPC = Exposure Point Concentration

mg/kg = milligrams per kllogram

mg/kg-day = milligrams per kilogram per day mg/m² = milligrams per cubic meter N/A ≈ Not Available

Total Risk Across All Exposure Routes/Pathways (Child + Adult)

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS RESIDENTIAL SCENARIO
REASONABLE MAXIMUM EXPOSURE
NORTON AFB, AOC40 TABLE 8

Scenario Timeframe: Future Receptor Population: Resident Receptor Age: Child and Adult

Primary Tanget Organ skin, hyperpigmentation and ker proteinuna (kitchey) eye, immune system eye, immune system	Ę	Medium Exposure	Exposure	Chemical		CHILD Carcinogenic Risk	ILD anic Risk		Chemical	eC-roN	CHILD Non-Carcinonenic Hazard Chotlent	zard Quotlent	and the second s	
Soil at AOC40 METALS RATE (Architor) Features 10tal RATE (Architor) Architor) Framework (Architor) Framework (Architor) Framework (Architor) Framework (Architor) Architor (Architor)		Medium	Point			,				3	R			
Soil at AOC40 METALS Routes Total METALS Routes Total METALS From METALS Tanget Organ Tanget Organ Total Hazzard Index Across All Media and All Exposure Routes Pounds Total Hazzard (Index Across All Media and All Exposure Routes Routes Total From Metals					Ingestion	Inhalation		Exposure		Primary	Ingestion	Inhalation	Dermai	Exposure
Soil at AOC40 METALS R.3E-06 1.0E-09 4.0E-07 R.7E-06 Arsenic Ars	┈							Routes Total		Target Organ				Routes Total
Signor S			Soil at AOC40	METALS					METALS	A CONTRACTOR OF THE CONTRACTOR				
N/A 4.3E-09 N/A 4.3E-09 Cadmium PCBs POtelinuria (kidney) 4.0E-01 6.8E-04 8.8E-04 8.8E-04 S.7E-08 9.5E-13 1.7E-08 Anochlor-1260 6ye, immune system 1.7E-02 1.6E-07 4.7E-02 S.3E-07 9.8E-12 1.6E-07 Anochlor-1261 6ye, immune system 1.6E-01 1.5E-07 4.7E-02 Total Pisk Across All Media and All Exposure Routes 9.5E-06 9.5E-06 9.5E-06 4.7E-02 Total Pisk Across All Media and All Exposure Routes 9.5E-06 9.				Arsenic	8.3E-06	1.0E-09	4.0E-07	8,75-06	Arsenic	skin, hyperpigmentation and keratosis	1.6E-01	9.3E-05	1.0E-02	1.7E-01
5s 5.7E-08 9.5E-13 1.7E-08 7.5E-08 Anochlor-1261 eye, immune system 1.7E-02 1.6E-07 5.1E-03 Total Pisk Across Soil 9.5E-07 9.5E-06 Anochlor-1261 eye, immune system 1.6E-07 1.5E-07 4.7E-02 Total Pisk Across Soil 9.5E-06 Total Hazard Index Across All Media and All Exposure Routes				Сафтічт	N/A	4.3E-09	N/A	4.3E-09	Cadmium	proteinuria (kidney)	4.0E-01	5.8E-04	8.8E-04	4.0E-01
5.7E-08 9.5E-13 1.7E-08 7.5E-08 Arochlor-1260 eye, immune system 1.7E-02 1.6E-07 5.1E-03 Total Pisk Across Soil 9.5E-06 Arochlor-1261 eye, immune system 1.6E-01 1.5E-07 4.7E-02 Total Pisk Across Soil 9.5E-06 S.E-06 Total Hazard Index Across All Media and All Exposure Routes				PCBs					PCBs					
5.3E-07 8.8E-12 1.6E-07 7.0E-07 Arochtor-1261 eye, immune system 1.6E-07 1.5E-07 4.7E-02 Total Risk Across All Media and All Exposure Routes 9.5E-06 9				Arochlor-1260	5.75-08	9.5E-13		7.5E-08	Arochlor-1260	eye, immune system	1.7E-02	1.6E-08	5.1E-03	2.2E-02
Total Hazard index Across Soil 9:5E-06 Total Hazard index Across All Media and All Exposure Routes 9:5E-06 9:5E-06				Arochtor-1254	5.3E-07	8.8E-12	1.6E-07	7.0E-07	Arochlor-1261	eye, ımmune system	1.6E-01	1.5E-07	4.7E-02	2.0E-01
Aedia and All Exposure Routes						Total Risk	Across Soil	9.5E-06		Total Hazard Index	Across All Me	dla and All Exp	osure Routes	8.0E-01
				Total F		a and All Expos	sure Routes	9.5E-06					9	

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1		Chamica
THE PARTY OF THE P	ADULT	Caminogonia Biek
		Chemical
		Exposure
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4.0E-01 1.7E-01

Total Skin HI =

Total Eyes, Nails, Immune System Hi =

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	Exposure	Routes Total		5.6E-03	1.1E-02		1.0E-03	9.6E-03	2.7E-02	
11.4	Dermal			1.2E-03	1.0E-04		5.9E-04	5.5E-03	osure Routes	
ard Quotient	Inhalation	•		3.0E-05	1.9E-04		5.4E-09	5.0E-08	la and All Exp	
ADULT Non-Carcinogenic Hazard Quotient	Ingestion			4.3E-03	1.1E-02		4.5E-04	4.2E-03	Across All Mec	
Non-Ca	Primary	Target Organ		skin, hyperpigmentation and keratosis	proteinuria (kídney)		eye, ımmune system	eye, immune system	Total Hazard Index Across All Media and All Exposure Routes	
Chemical			METALS	Arsenic	Cadmium	PCBs	Arochlor-1260	Arochlor-1261		
	Exposure	Routes Total		1.15-06	5.6E-09		1.4E-08	1.3E-07	1.2E-06	1.2E-06
JLT enic Risk	Dermal			1.9E-07	A/A		8.1E-09	7.5E-08	Total Risk Across Soil	ure Routes
ADULT Carcinogenic Risk	Inhalation			1.3E-09	5.6E-09		1.2E-12	1.2E-11	Total Risk	and All Expos
	Ingestion			8.95-07	N/A		6.2E-09	5.8E-08		Total Risk Across All Media and All Exposure Routes
Сћетіса			METALS	Arsenic	Cadmium	PCBs	Arochior-1260	Arochlor-1254		Total
Exposure Point			Soil Soil at AOC40							
Exposure			los							
Medium			Soil							

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